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THE JOSHUA TREE ROAD IMPROVEMENTS PROJECT

by
Kay Simpson

January 1981

National Park Service
Western Archeological Center
Tucson, Arizona

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Chapter 1

THE JOSHUA TREE ROAD IMPROVEMENTS PROJECT

Joshua Tree National Monument preserves a piece of southern California's great Mohave and Colorado deserts. Three routes provide access to the monument. The south entrance near Cottonwood Spring along Route 1 can be approached from the east or the west along Interstate 10. On the north, the monument can be entered from California State Highway 62 through either the Joshua Tree Route 2 or Twentynine Palms Route 1 entrance. Several dirt roads also enter the area (figure 1).

The Joshua Tree Roads Improvements Project will entail the resurfacing and widening of 73.5 mi. of existing roads along Routes 1, 2, and 3; the realigning of adverse curves; the constructing of drainage culverts and ditches; and the constructing of exhibits and pulloffs with interpretive displays. The roadway will be 20 feet wide, with 20-foot shoulders. This project is divided into six construction packages: 110, 111, 142, 173, 198, and 224 (figures 2-7).

Package 224, from Cap Rock to the Joshua Tree entrance, was issued an archeological clearance (102-JOTR) for road widening on March 6, 1975, on the basis of an archeological survey conducted by Daniel McCarthy (U.S. Department of the Interior 1975). A team of six Western Archeological Center archeologists, under the direction of Philip Keairns, surveyed the remaining five packages, totaling 55 linear mi., from November 14 to December 20, 1979. At that time, park superintendent Richard Anderson requested that an additional 4.5 mi., from the Pinto Wye to the Twentynine Palms entrance, be surveyed. These surveys were conducted to provide an inventory and assessment of cultural resources within road project corridors.

McCarthy recorded no sites in 1975. The 1979 survey crew recorded 29 sites and 225 isolated artifacts and features. Fourteen sites were of prehistoric date and 11 of historic date; one site had prehistoric and modern components, and three were of unknown age. The prehistoric sites tended to be sparse, widely dispersed sherd and/or lithic scatters, rockshelters, or caches. The historic and modern sites consisted of trash dumps, graves, mines, graffiti, and construction debris. The majority of the isolated features recorded are historic and modern

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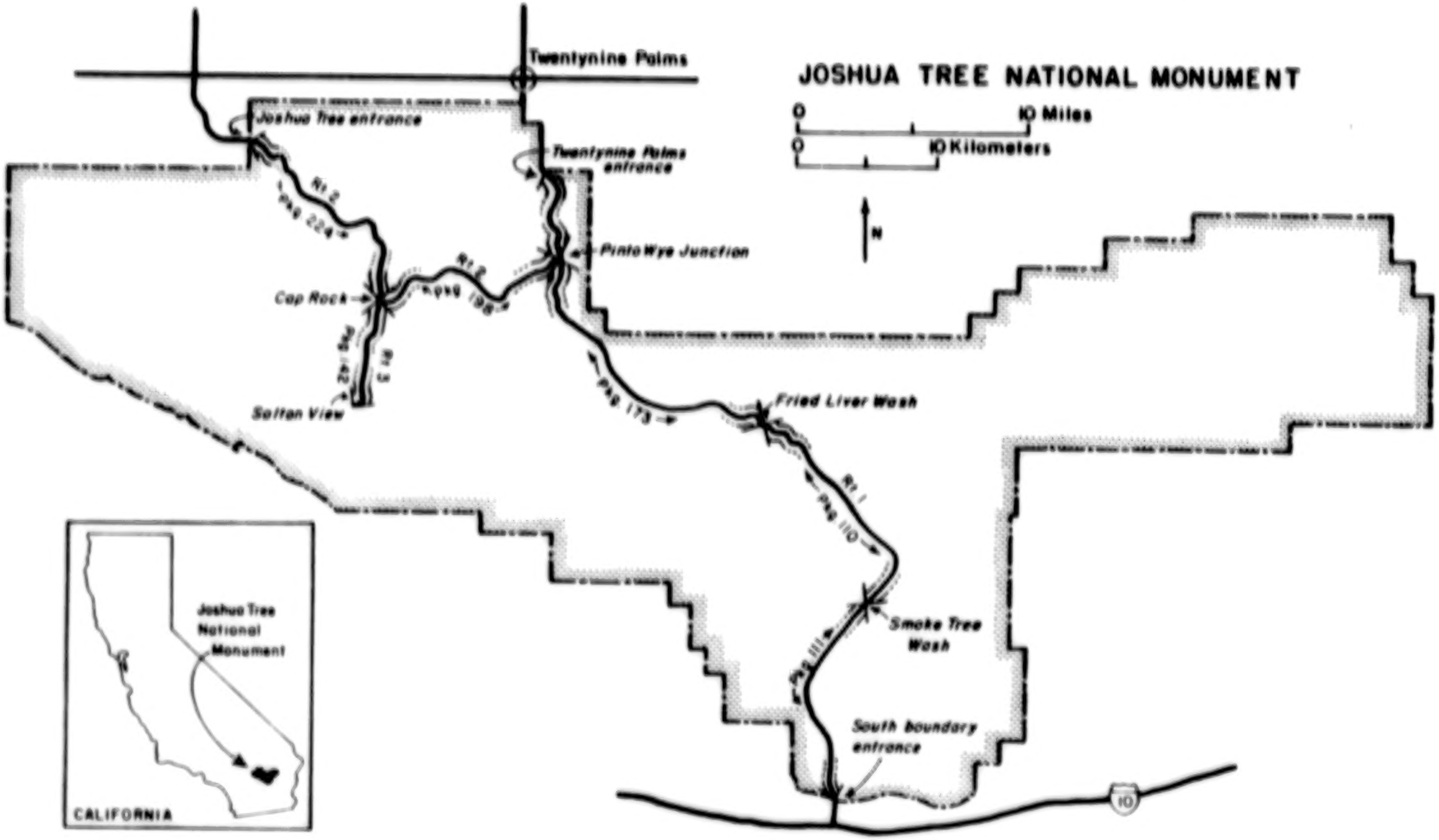

Figure 1. The Joshua Tree Road Improvements Project

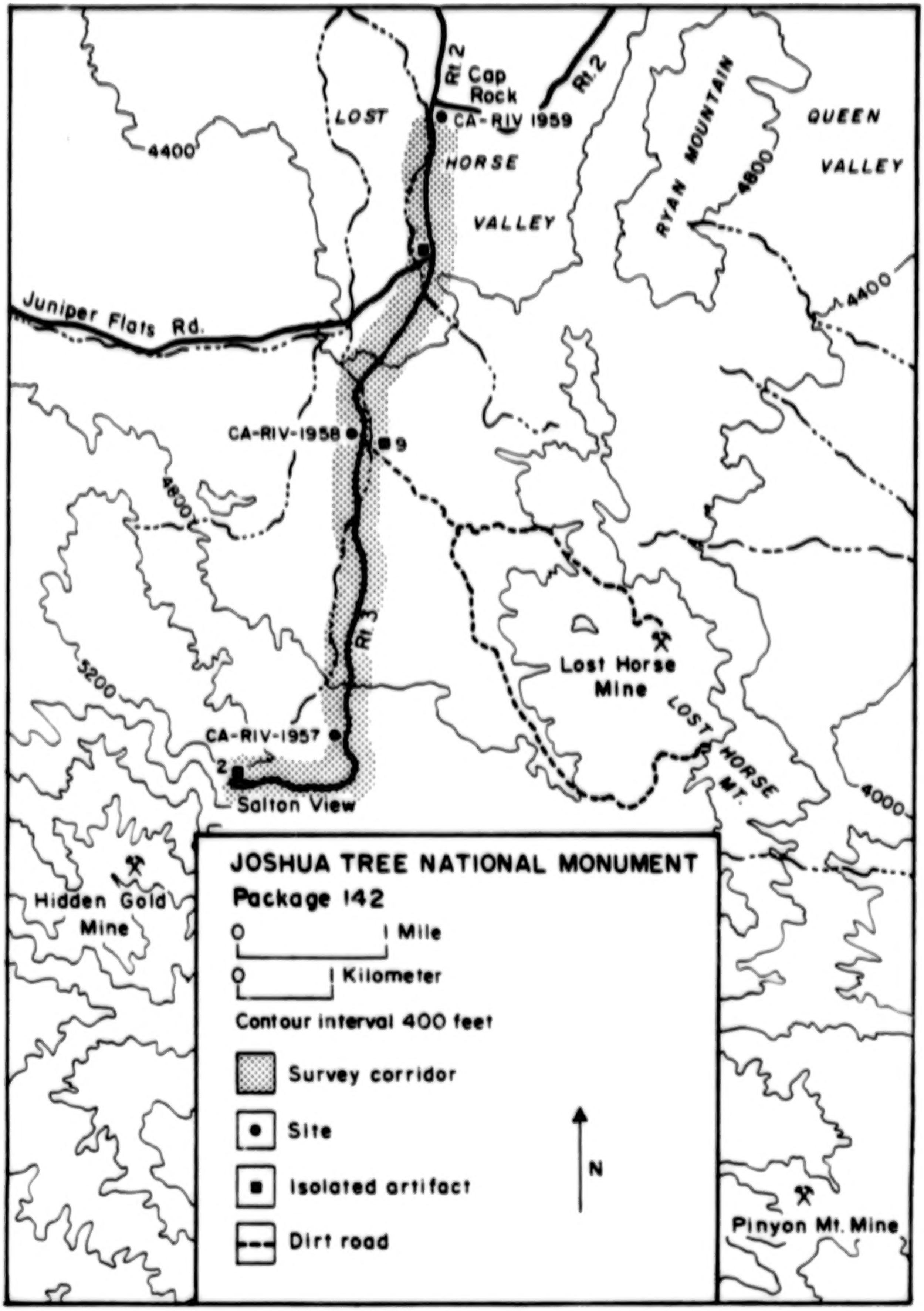

Figure 2. Package 142 - Salton View to Cap Rock

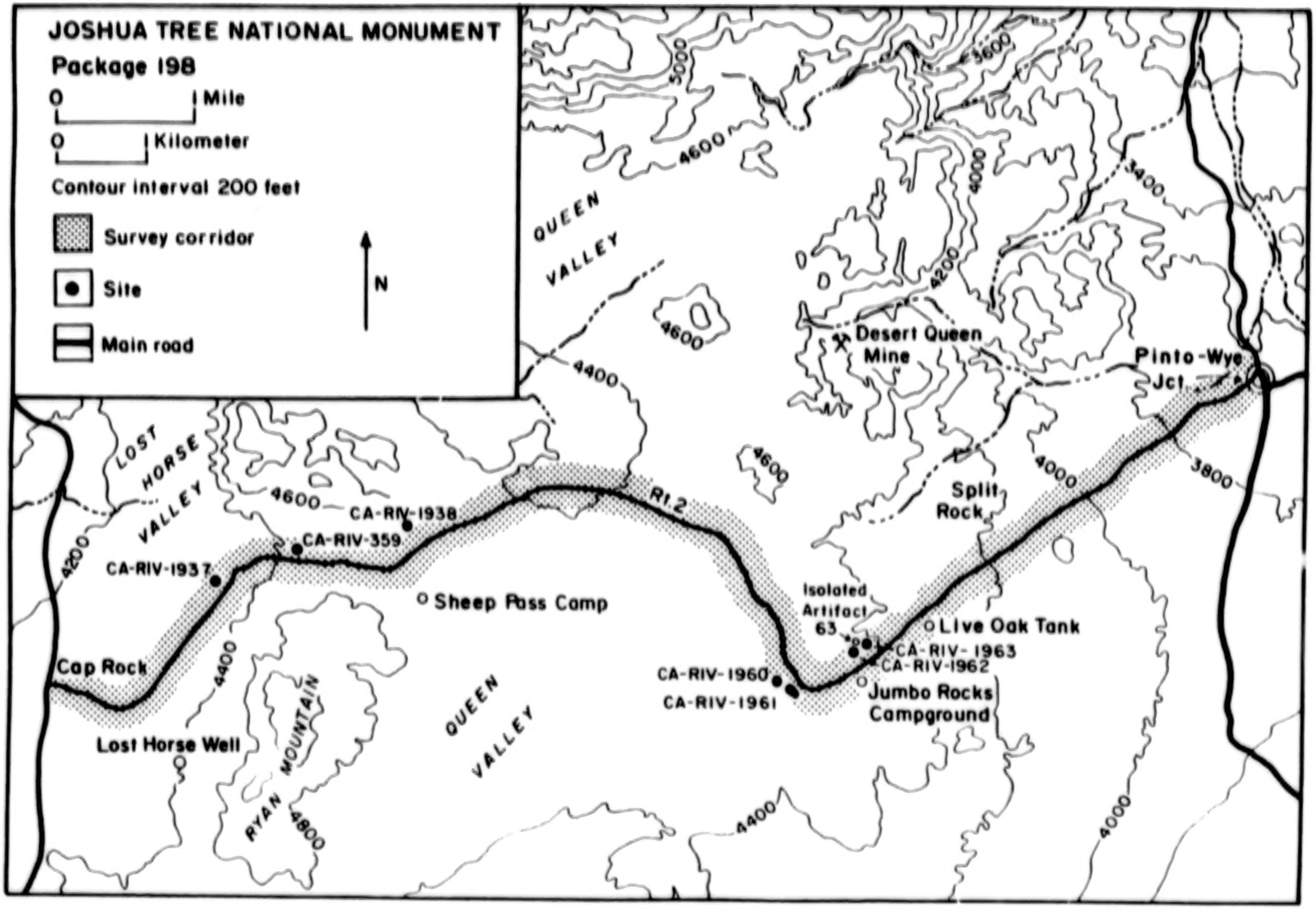

Figure 3. Package 198 - Cap Rock to Pinto Wye

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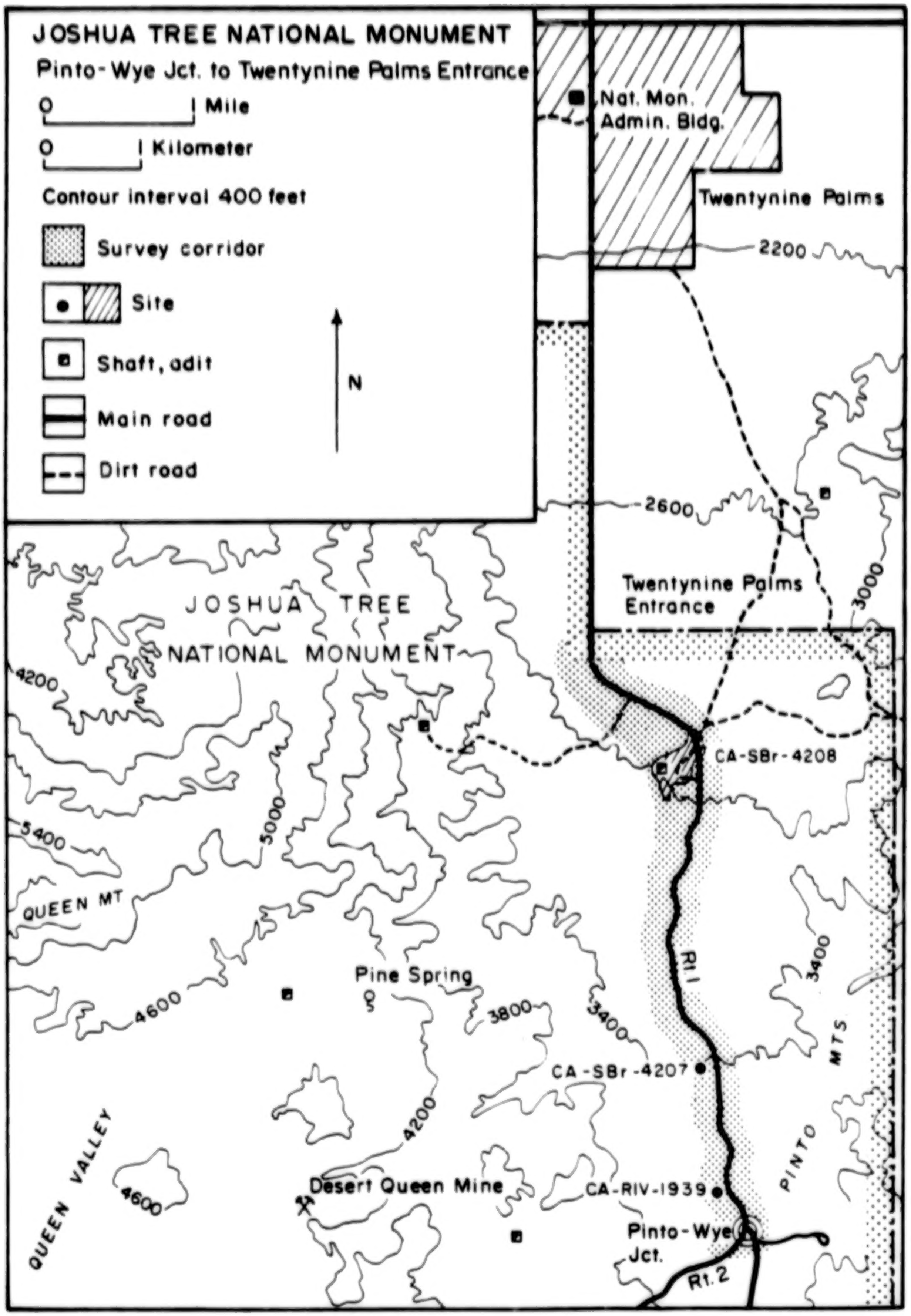

Figure 4. Pinto Wye to Twentynine Palms Entrance (No Package Number).

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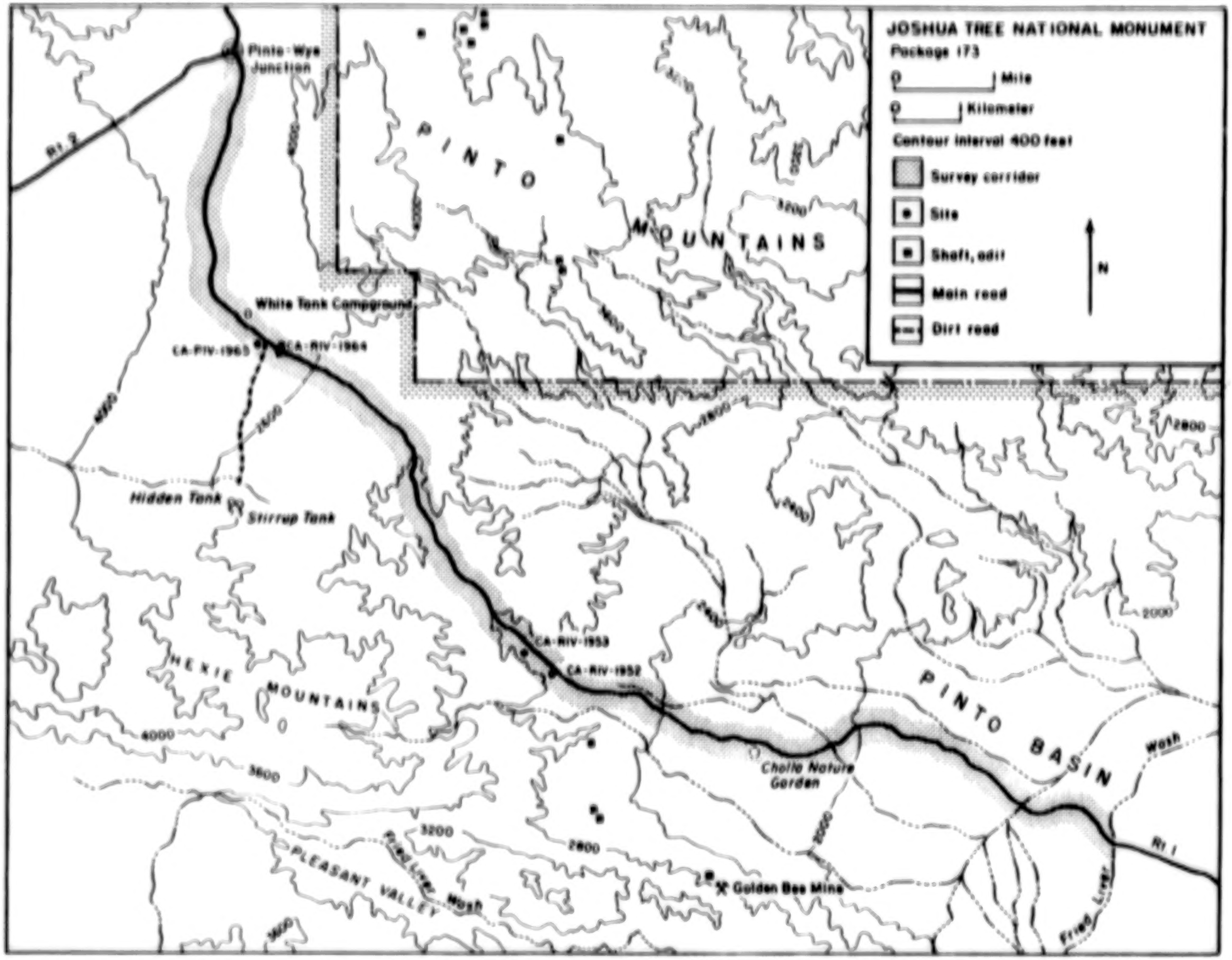

Figure 5. Package 173 - Pinto Wye to Fried Liver Wash

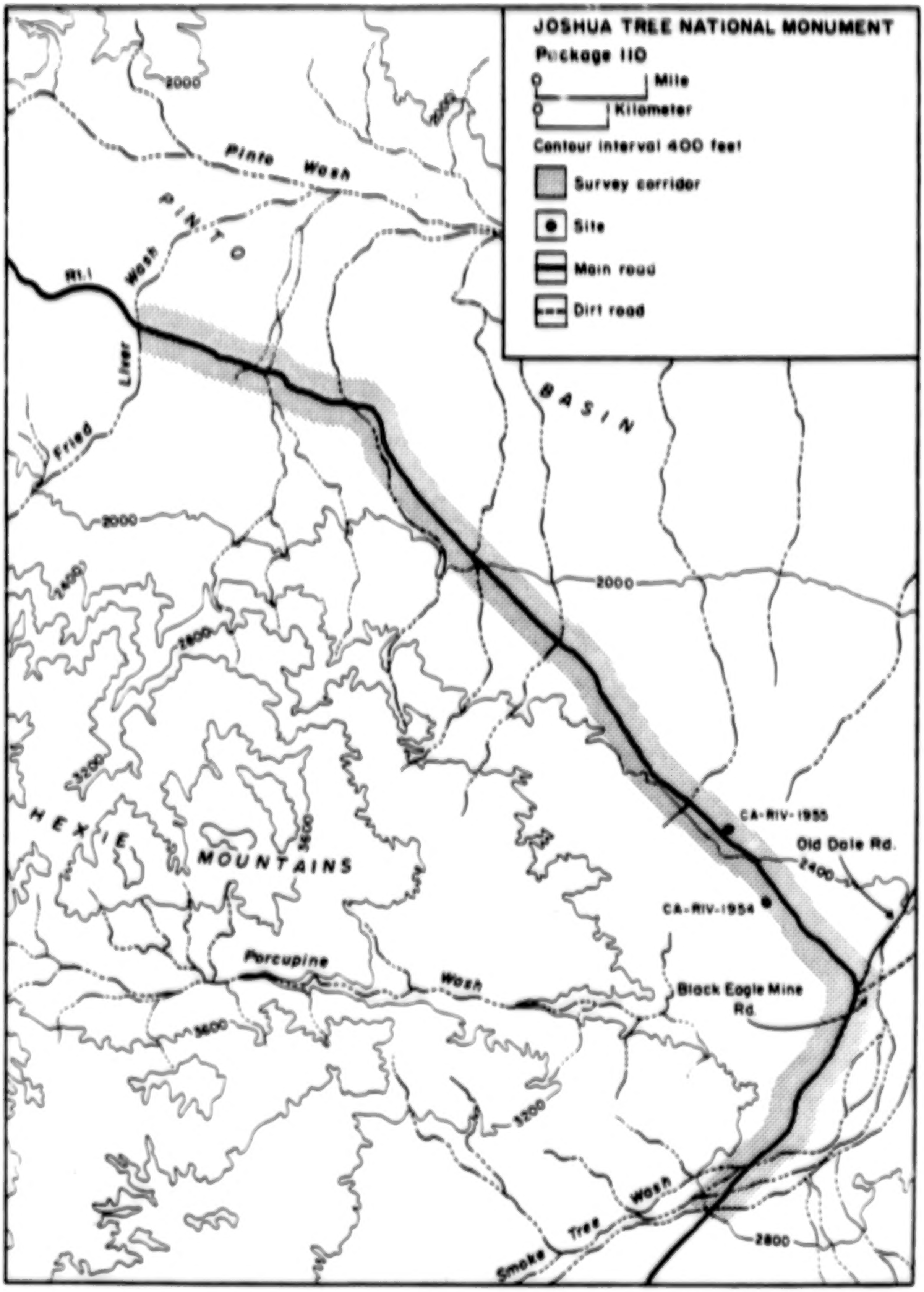

Figure 6. Package 110 - Fried Liver Wash to Smoke Tree Wash

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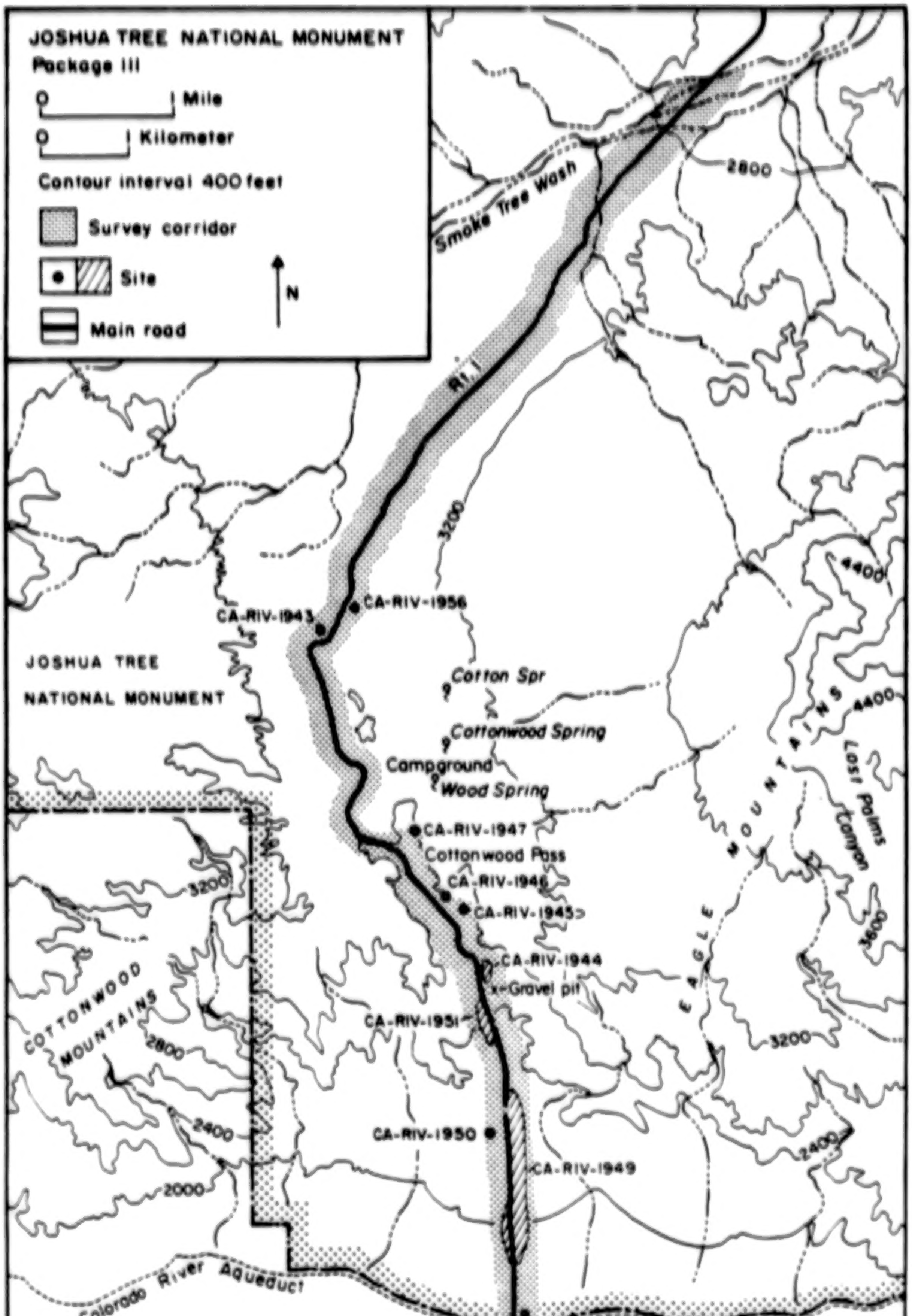

Figure 7. Package III - Smoke Tree Wash to South Entrance

roads. Forty-seven isolated ceramic, 58 chipped stone, and 3 ground stone artifacts were collected. Nineteen historic artifacts, 5 historic features, and 10 rock piles were also recorded.

Project Location

The survey corridor crosses a wide range of physiographic areas. From the Salton View (formerly Keys' View) overlook at the crest of the Little San Bernardino Mountains, Route 3 briefly heads east, crossing small ridges, and then turns north along Lost Horse Valley's southeastern edge. Scattered quartz monzonite boulders protrude through valley alluvium at various places, most notably at Cap Rock. The Salton View/Cap Rock road segment (figure 2) passes through one of the monument's finest strands of Joshua trees.

At Cap Rock, the corridor turns northeast along Route 2, crosses the Ryan Mountains through Sheep Pass, and enters Queen Valley. East of this valley lies the Jumbo Rocks boulder outcrop. The road then descends a northeast-trending alluvial deposit to the Pinto Wye.

At the Pinto Wye junction, Route 1's north fork follows a constricted, north-trending canyon between two sections of the Pinto Mountains to the monument boundary. The south fork follows an alluviated eastern flank of the Pinto Mountains to just beyond White Tank Campground. At this point, the road turns southeast to descend into Wilson Canyon, a constricted canyon between the northeast Pinto Mountains and the southeast Hexie Mountains, and then enters Pinto Basin. This canyon marks the Mohave/Colorado Desert transition zone. The road runs eastward across the dissected basin, crossing the upper drainages of Pinto Wye and Fried Liver washes, and then ascends and traverses alluvial fans on the northeast slopes of the Hexie Mountains. At the Old Dale Road junction, the project road turns southwest, crosses the very large, northeast-flowing Smoke Tree Wash, and skirts the western slopes of the Eagle Mountains. The road then follows Cottonwood Canyon through Cottonwood Pass between the Cottonwood and Eagle mountains, continues down the alluvial fan of the two ranges, and stops at the monument boundary just above Shavers Valley.

Survey Methods

The Joshua Tree Road Improvements Project survey was essentially an inventory survey. Primary objectives were to locate, identify, record, and evaluate cultural resources in the project corridor.

Because construction plans had not been finalized, a 200-m corridor (100 m on each side of an existing road) was intensively surveyed to ensure that later project alterations would not require additional fieldwork. Six archeologists walked transects 15-20 m apart, one side of the road at a time. Cottonwood Canyon's steep walls and some quartz monzonite boulder outcrops were less intensively covered, although generally terrain was not a hindrance. Ground visibility was excellent as vegetation was low and widely spaced.

Sites were staked with capped rebar, inscribed with project designation, field number, and date. These stakes also served as datum points for the site maps. Sites were given sequential field numbers prefixed by JOTR 79A. This Western Archeological Center designation system identifies park, project year, and job sequence within that year. All isolated artifacts were labeled JOTR 79A-IA with a sequential field number. Separate Western Archeological Center forms were used for prehistoric, historic, and petroglyph sites and isolated artifacts.

All sites and isolated artifact locations were pinpointed on 1:62,000-scale USGS quadrangle maps and on 1:30,000-scale aerial photographs. Site maps identifying features, artifact collection areas, concentrations, and important topographic features were made using tape and compass.

Movable isolated artifacts were collected. Because most sites were small, with sparse artifact scatters, collections were limited to diagnostic types. No formal sampling design was used for such collection. Locations of all artifacts removed from a site were plotted on site maps in order to preserve surface context for future investigations.

Site records, maps, photographs, and collected artifacts are housed at the Western Archeological Center in Tucson, Arizona. Copies of site forms are also on file at California regional archeological clearinghouses at the University of California, Riverside, and the San Bernardino County Museum Association.

Chapter 2

ENVIRONMENTAL SETTING

Joshua Tree National Monument straddles southern California's two great deserts--the Colorado low desert and the Mohave high desert (figure 8). The monument lies in a unique setting characterized by physiographic and environmental diversity. The distinction between the two deserts is based mainly on elevation, but also reflects climatic, vegetational, and drainage patterns. The Mohave River drains most of the high desert, while the Colorado River or Gulf of California receives most of the runoff from the low desert.

Mohave Desert

The Mohave Desert consists of broad, alluviated basins that generally lie above 2,000 ft. and are separated by rugged mountain ranges rising over 5,000 ft. This desert covers the northern and western monument where the Little San Bernardino Mountains surround the high desert valleys of Pleasant, Queen, Lost Horse, and Wonderland of Rocks. Playas, or dry lake beds, lie at the bottom of many of the closed basins. These basins constantly receive upland debris. Small, islandlike hills rising above the alluvial fill are remnants of buried mountain topography.

Two formation processes created the monument's high desert valleys. Queen and Lost Horse valleys were formed by differential erosional rates between rock underlying the valley and rock composing the surrounding mountains. Valley rock, less resistant to erosion than rock in the surrounding mountains, disintegrates sooner to form a low-lying plain. Faulting, uplift, and subsidence created the second valley type, exemplified by Pleasant Valley. The Blue Cut fault, which has a 50-mi. trace stretching from the western foot of the Little San Bernardino Mountains to the eastern edge of the Pinto Basin, follows the base of the Hexie Mountains. North of the fault, land uplifted to form the Hexie Mountains, while the terrain subsided to the south. This combination of uplift and subsidence created Pleasant Valley (Wanrow 1975).

During a period of wetter climate, when a periodic lake existed in Pleasant Valley, several hundred feet of sediments were deposited.

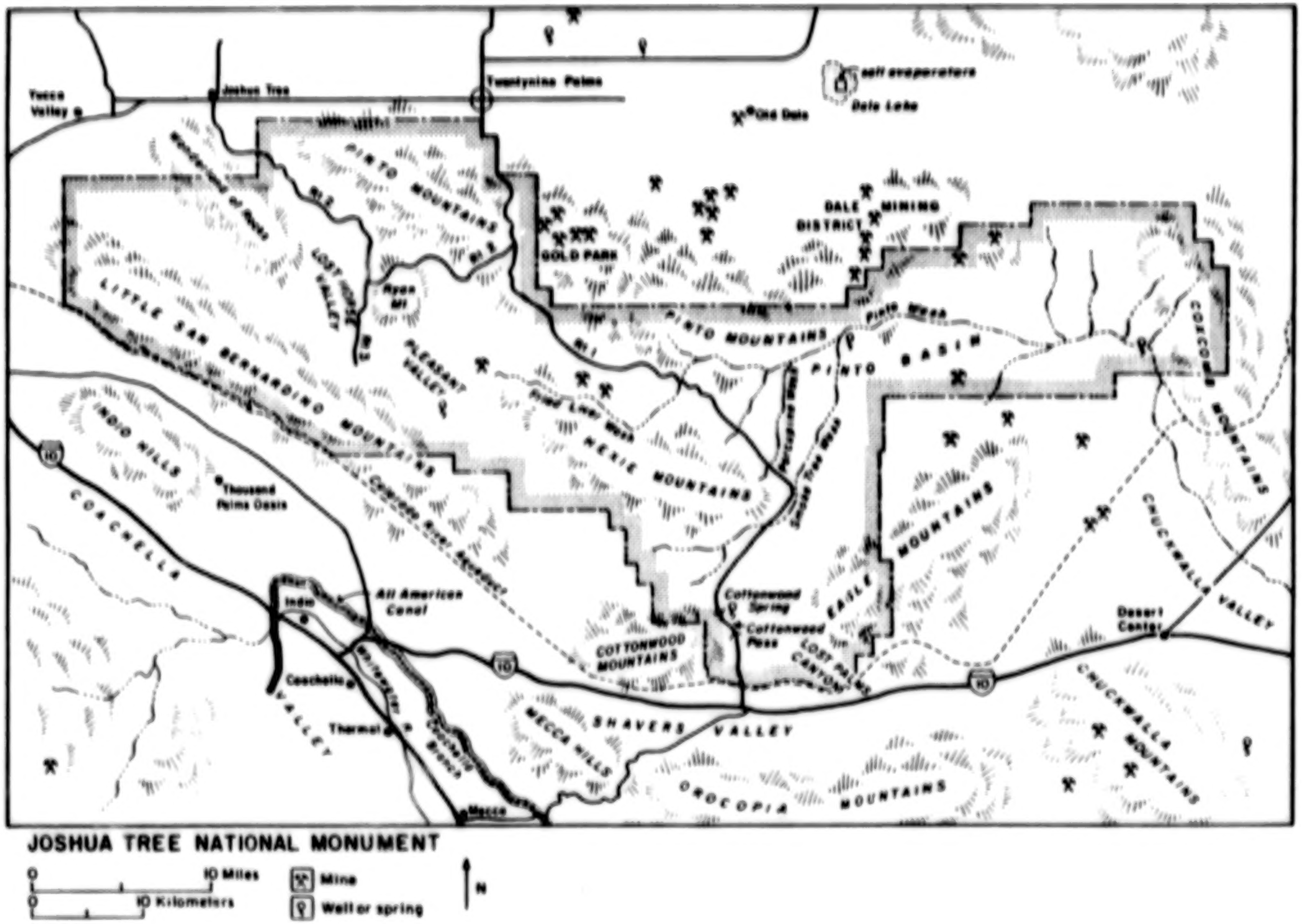

Figure 8. Joshua Tree National Monument and vicinity

North of this playa, the monument's largest, are sand deposits and an incipient sand dune formation. Twentynine Palms Valley, a typical Mohave Desert alluviated basin with several playas, lies immediately north of the monument. This valley, lower and with less water and sparser vegetation than most valleys in the monument, was important historically to local residents as a salt and chemical source. Unlike Twentynine Palms Playa, Pleasant Valley Playa was never commercially mined for salt.

The high monument valleys, however, were important pasture lands. Galleta grass covered the valley floors, providing lush grazing. By the 1870s, cattlemen were using Joshua Tree's high desert, and in the following decades the land became prime cattle country (Parker 1980).

Colorado Desert

The Colorado Desert, the most arid subdivision of the Sonoran Desert, is an elongated, low-lying depression whose alluviated floor is separated from the Gulf of California by the Colorado River delta and is partly occupied by the Salton Sea. Its mountain ranges resemble those of the Mohave Desert, but are lower, receive less moisture, and are separated by broader valleys.

Pinto Basin, which lies within the monument, is bordered by the Pinto Mountains on the north, the Little San Bernardino Mountains on the west, the Eagle Mountains on the south, and the Coxcomb Mountains on the east. At its southeast corner, the basin empties into Chuckwalla Valley through a gap between the Eagle Mountains and the Coxcombs. One enters the basin on the north through Cottonwood Pass between the Cottonwood and Eagle mountains. Basin elevation ranges from 1,000 to 1,800 ft., while the surrounding ranges rise to elevations between 4,000 and 6,000 ft. Pinto Wash drains the flat central basin. Extensive alluvial fans lie against the surrounding hills.

The geologic history of the Colorado Desert Basin involves subsidence, local volcanic activity, intermittent movements along fault lines, and occupation by at least one large freshwater lake as recently as 400 years ago (Jahns 1954:17). Colorado Desert basins underwent radical changes throughout the late Pleistocene and Holocene periods. The several climatic sequences that have been proposed for the region (such as T. F. King 1975:17 and Bettinger 1974) disagree considerably. The two changes that had substantial effects on aboriginal populations in the Coachella Valley and nearby Joshua Tree area were the periodic disappearance of Lake Cahuilla and the late Pleistocene disappearance of the Pinto River.

Salton Basin lies within the tributary system of the Colorado River. Throughout the late Quaternary, the river discharged water into the basin during summer floods, forming transient saline lakes. Occasionally, however, the entire discharge of the Colorado River emptied into the basin, forming a freshwater lake, Lake Cahuilla, which is 100 mi. long, 30 mi. wide, and 300 ft. deep. Eventually, silt deposition flattened the Colorado's stream gradient until the river rediverted its discharge south to the gulf, allowing the isolated lakes to dry. Pleistocene stands of Lake Cahuilla were not the result of increased precipitation or cooler temperatures but formed solely in response to diversions of the Colorado River.

Six late Pleistocene shorelines occur between heights of 31 m and 52 m above the lakebed. A prominent shoreline with 3 or 4 lacustrine intervals dating within the last 2,000 years occurs at a height of 12 m. Historical sources indicate that the last high stand of the lake occurred before A.D. 1540. The Colorado River has maintained its present course from Yuma to the Gulf of Mexico for over 400 years (Wilke 1978; Waters 1980).

Lowland Patayan occupation was intensive along the late Holocene shorelines, with which many artifacts and features are associated. Association of Malpais or San Dieguito material with late Pleistocene shorelines is more controversial. Waters (1980:63) asserts that no archeological material is associated with Lake Cahuilla's late Pleistocene stands; Hayden (1976) and Childers (1977), on the other hand, associate Malpais and San Dieguito I sites with these stands.

During the Pleistocene, Pinto Wash appears, at its wide upper end, to have been a shallow lake that narrowed to a low-gradient, shallow stream at its lower end (Scharf 1935). However, lake stand intervals have not been determined. Recently, Jefferson (1973b) has asserted that no body of water has stood in the Pinto depression during Holocene times.

Hydrology

Perennial streams are nonexistent in or near the monument, but there are over 120 known water sources, including springs, wells, seeps, and the 5 spectacular palm oases. The lack of well-developed consolidated soil layers impervious to water prevents the formation of water tables in the region. Surface water quickly flows off, with little of it permeating the soil deeply enough to form a water table. The largest groundwater occurrence is in the Pinto Basin (U.S. Department of the Interior 1974:16-17). Cottonwood Spring was especially important as a stopover for travelers and as a water source for mines in the surrounding mountains.

Geology

The mountain ranges within the monument consist of complex granitics, such as gabbro, granodiorite, and quartz monzonite; some metamorphic assemblages; and some rhyolites and basalts (U.S. Department of the Interior 1974:16; T. F. King 1975:11).

Knappable materials such as cherts, quartz, quartzites, and rhyolites abound. No modern surveys of the monument's mineral resources have been made, but local mines have produced about 12,000 troy ounces of gold, 4,000 troy ounces of silver, 33,800 pounds of by-product lead, and 20 tons of bismuth ore. Iron deposits are mined in the Eagle Mountains (U.S. Department of the Interior 1974:16).

Piles of quartz monzonite are a distinctive feature of the high desert. Quartz monzonite, an igneous rock similar to granite, was once part of a molten mass that was forced upward into overlying, older Pinto gneiss. The monzonite cooled before reaching the surface and crystallized to form solid rock. Erosion later stripped away the gneiss, exposing monzonite outcrops. Monzonite usually fractures at nearly right angles, resulting in rectangular boulders, although weathering has reduced many outcrops to jumbled rock piles. These rock piles often are lined with small niches and overhangs that afforded temporary shelter and cache locations to both prehistoric and early historic residents (Wanrow 1975; Trimble 1979).

The San Andreas fault zone to the west and several local faults produce substantial seismic activity in the Joshua Tree area. This has resulted in the folding and rearranging of drainage patterns and the creation of seeps and oases.

Flora

The physiographic features just described dictate corresponding biotic differences. The region is characterized by three altitudinal plant belts, each of which is marked by a particular dominant vegetation: the creosotebush scrub community, the Joshua Tree woodland community, and the pinyon/juniper community (Miller and Stabbins 1964:19; U.S. Department of the Interior 1973b). The extent of overlapping of species within these belts depends on slope exposure, drainage, and soil conditions, and there are also transitional areas between the belts.

The creosotebush scrub community dominates the deserts at elevations below 3,500 ft. (Went 1948:243; Ornduff 1974:112). Creosotebush (*Larrea tridentata*) occurs in almost pure stands over large areas. Bursage (*Ambrosia dumosa*) is a codominant species. Other frequently occurring species include desert-almond (*Prunus fasciculata*), indigobush (*Dalea Schottii*), dye-bush (*Dalea Emoryi*), and ocotillo (*Fouquieria splendens*). Cacti include barrel cactus (*Ferocactus acanthodes*), beavertail (*Opuntia basilaris*), several species of prickly pear (*Opuntia* spp.), silver cholla (*Opuntia echinocarpa*), and jumping cholla (*Opuntia Bigelovii*). The washes support a riparian association containing willow (*Salix* spp.), mesquite (*Prosopis juliflora*), paloverde (*Cercidium floridum*), and smoketree (*Parosela spinosa*) (U.S. Department of the Interior 1973:13; T. F. King 1975:14; Wilke 1978:23, 33). Summer temperatures within the creosotebush scrub community are frequently very high, reaching 120° or more in the Pinto Basin, with temperatures rarely falling below the freezing point in the winter. Rainfall averages from 2 to 5 inches (Ornduff 1974:112).

The Joshua Tree woodland community occurs at intermediate elevations ranging from slightly above 2,000 ft. to nearly 6,000 ft. The most noticeable species in the community are the Joshua tree (*Yucca brevifolia*) and the Mohave yucca (*Yucca schidigera*). Associated with this community are Mormon tea (*Ephedra* spp.), cottonwood (*Populus Fremontii*), blackbrush (*Coleogyne ramosissima*), saltbush (*Atriplex* spp.), beargrass (*Nolina* spp.), buckwheat (*Eriogonum* spp.), galleta grass

(*Hilaria* spp.), and jimsonweed (*Datura* spp.). The break between the creosotebush scrub community and the Joshua tree woodland is not sharp. Many species from the lower creosotebush scrub community also occur in the Joshua tree woodland, including creosotebush, bursage, species of the *Opuntia,* and several species of *Eriogonum* (U.S. Department of the Interior 1973:13; Ornduff 1974:111; T. F. King 1975:14; Hogan 1977:18; Wilke 1978:25-28, 33). Average annual rainfall is between 6 and 8 inches (U.S. Department of the Interior 1973:12; Ornduff 1974:111).

The pinyon/juniper woodland community characterizes the highest elevations within the monument, from 4,520 ft. to 6,000 ft. Dominant plant species are single-leaf pinyon (*Pinus monophylla*) and juniper (*Juniperus californica*). Other common species include scrub oak (*Quercus dumosa*), beargrass (*Nolina Parryi* and *N. Bigelovii*), and several species of cholla and prickly pear. The break between the pinyon/juniper woodland community and the Joshua tree woodland community is also not sharp. Many of the same species occur in both, especially beargrass, juniper, Mohave yucca, and many cholla (U.S. Department of the Interior 1973:14; Ornduff 1974:196; T. F. King 1975:14; Wilke 1978:25-28, 33).

Oases, tanks, and springs occurring throughout the monument have associated riparian communities, which include the California fan palm (*Washingtonia filifera*), cottonwood, mesquite, willow, arrowweed (*Pluchea sericea*), and many tuber- and root-producing plants, such as desertlily (*Hesperocallis undulata*) and tule-potato (*Sagittaria latifoeia*) (U.S. Department of the Interior 1973:14; Ornduff 1974:65; T. F. King 1975:14).

Fauna

Joshua Tree National Monument's faunal community is a rich and varied one, well adapted to desert life. One hundred forty-one animal species are native, permanent residents, and members of numerous species pass through the area (Miller and Stebbins 1964:44).

Reptiles include 16 lizard species, 19 snake species (including 5 species of rattlesnakes) and the desert tortoise. Amphibians are understandably few in this desert country. Two species of toads, two species of tree frog, and a bullfrog species can be found near water holes.

Birds are abundant, with 60 species recorded. Rodents dominate the list of mammals, with 12 species of mouse (including pocket mice and vole), 3 species of kangaroo rat, 2 species of wood rat, 3 species of squirrel, 1 species of chipmunk, and 2 species of rabbit (desert cottontail and black-tailed jack rabbit) represented. Carnivores include bobcat, coyote, gray fox, kit fox, mountain lion, raccoon, and badger. Desert bighorn sheep and mule deer range in the pinyon belt (Miller and Stebbins 1964).

Small mammals, such as squirrels, rabbits, chipmunks, mice, and rats, especially wood rats, were significant staples in the Cahuilla diet and probably were included in the diet of prehistoric peoples. Desert tortoise shells were used for rattles and containers. Feathers figured prominently in ceremonial events (Cultural Systems Research, Inc. 1979:15).

Habitats

Habitats are "environmental settings characterized by relatively circumscribed features of vegetation, soil, and drainage [that] occur within the broader plant belts and, in some instances, are not confined to a single belt" (Miller and Stebbins 1964:20). Such habitats were probably of extreme importance to prehistoric peoples and early settlers, as they govern the co-occurrence of plant and animal species. Prominent habitats in the monument include:

Sand Dune. Loose sand on flat ground and large dunes occur within the creosotebush belt. Creosotebushes grow in the low sandy areas, but not on dunes, which are covered with dune grasses and annuals. The most conspicuous dunes are in Pinto Basin. This habitat is occupied by fringe-toed lizards, desert kangaroo rats, desert tortoises, Le Conte thrashers, and kit foxes.

Desert Wash. Diverse scrubs and annuals grow in the monument's many drainage channels where large bushes and small trees form irregular borders. Smoketrees grow in drier places, desertwillow and mesquite where there is more underground moisture. Catclaw occurs at higher altitudes than the other trees. Paloverde is conspicuous in the washes near Cottonwood Spring. Common animals include the verdin, phainopepla, black-tailed gnatcatcher, roadrunner, costa hummingbird, mockingbird, western whiptail, and zebra-tailed lizard.

Creosotebush. These bushes dominate the desert valleys and alluvial fans. Lesser bushes, sparse grasses, and annuals co-occur. Miller and Stebbins (1964:23) report that no species roams this habitat exclusively, and species numbers are usually lower than in adjoining habitats. Merriam kangaroo rats, desert tortoise, antelope ground squirrel, and black-throated sparrow are common here.

Cholla Cactus. Chollas occur sparsely in both the creosotebush and yucca habitats, but occasionally they form large stands on alluvial slopes. The cactus garden area on the west slope of the Pinto Basin along Route 1 is a prominent patch. Desert wood rats, black-throated sparrows, and house finches congregate here.

Oasis. At every oasis, a fault allows groundwater to rise upward along cracks in the bedrock. Only at Fortynine Palms are there standing pools, but other oases have water a few feet down. Large, water-dependent tree species, such as cottonwood, mesquite, willow, and California fan palm, occur, but not all oases have all tree species.

Only five stands of native California fan palm occur in the monument. The two largest palm stands grow near the south monument boundary in Lost Palms Canyon and Munsen Canyon. Twentynine Palms and Fortynine Palms oases mark the northernmost limit of the fan palms' occurrence as native trees. Cottonwood Spring Oasis is man-made. During the early 1900s, homesteaders planted fan palms and cottonwood trees at a natural spring. However, the palms seem to be decreasing in number here. Several older trees have died, and few young trees have been produced. Cottonwood Spring demonstrates the transience of water availability within the monument. The spring poured out thousands of gallons per day during the early 1900s, slowed to a trickle by the late 1960s, and then was boosted to 30 gallons per hour after the 1971 San Fernando earthquake (Nelson 1974).

The higher water sources, such as Black Rock Spring, Quail Spring, Stubb Spring, and Pinyon Wells, have little tree growth. Formerly, there was standing water at Twentynine Palms, and a permanent stream flowed in Little Morongo Canyon. Small ponds and small sedge marshes once occurred in the latter canyon.

Many animal species are to be found at these water sources. Oasisdependent species include the hooded oriole, Bullock oriole, brown towhee, and song sparrow. More transient species include the mourning dove, mountain quail, Gambel's quail, house finch, goldfinches, bats, coyote, mule deer, and mountain sheep.

Yucca. In this habitat, yuccas and junipers provide elevated nesting sites, some fruits, and wood sources. Joshua trees are the most conspicuous plant, but smaller yuccas, such as the Spanish dagger, and beargrass coexist. Diverse shrubs and cacti are found on hill slopes. Among the many animals that prefer this habitat, one finds the night lizard, spiny lizard, ladder-backed woodpecker, Scott oriole, cactus wren, loggerhead shrike, sparrow hawk, desert wood rat, antelope ground squirrel, San Diego pocket mouse, and cactus mouse.

Desert Grasslands. Several high desert valleys sport lush grasses and annuals after heavy rains; Pleasant and Queen valleys are notable examples. Western meadowlarks and horned larks favor this environment.

Rocky Canyon. Steep, sparsely vegetated rock slopes are common in the yucca belt. They are not significant drainage channels. Inhabitants include the chuckwalla, collared lizard, canyon wren, rock wren, white-throated swift, western pipistrelle, Beechey ground squirrel, canyon mouse, desert cottontail, and mountain sheep.

Pinyon. A sparse scattering of pinyon trees occurs on high, northern, rocky slopes in the Eagle Mountains. This habitat closely corresponds to the pinyon/juniper woodland. Animals common to this habitat are the gray fox, Merriam chipmunk, pinyon mouse, mule deer, mountain quail, screech owl, scrub jay, pinyon jay, plain titmouse, bushtit, gray vireo, Gilbert skunk, and California striped racer.

Chaparral. As the road corridor did not transect this community, it will be described only briefly. Patches of manzanita and scrub oak occur within the pinyon/juniper community. Mule deer are among the economically important species found here.

Summary

The local physiographic, climatic, and biotic conditions described above had several important ramifications for the human inhabitants of the monument area. First, water was available only at springs, seeps, and oases, usually found along fault lines. Second, rock outcrops produced thousands of holes, niches, and rockshelters that could be used for storage, habitation, and art work. Third, local rocks useful for toolmaking included granitics for milling stones and rhyolitics, quartz, and several metamorphics for flaked stone tools. Fourth, climate broadly controlled population distribution. During the winter, the low desert could have been occupied while the high desert was cold or under snow. During the summer, lowland heat and limited food and water sources forced people to use the high desert, with its mild weather and more abundant plant and animal resources.

Chapter 3

PREHISTORIC SITES

Although archeological fieldwork has been conducted in the monument for over 50 years, the monument's prehistory is sketchily known. T. F. King (1975:60) estimated that only 2.5 percent of the monument's surface area has been surveyed, with less than 100 archeological sites recorded. As two major reviews of previous research in the Joshua Tree National Monument have been published (T. F. King 1975; Wildeson 1969), the following discussion briefly summarizes previous research and regional culture history sequences.

Previous Research

Most of the investigators in this area have focused on prehistoric rock art (Stewart 1929; Strong 1929; McCarthy 1977; O'Neil 1968). The most ambitious regional survey conducted in this area was by Elizabeth and William Campbell from 1929 through the early 1940s. They surveyed and collected artifacts from 31 "districts," concentrating on salvaging caches (Campbell 1931). Unfortunately, as topographic maps were not available at that time, the locations of most of their collection areas are now unknown (T. F. King 1975:43). The Campbells also conducted intensive surface collections along the Pinto Wash (Campbell and Campbell 1935).

In 1957, the National Park Service initiated a program of survey and excavation under the direction of William Wallace. Wallace surveyed a 10 mi.^{2} area and excavated one site near Squaw Tanks (Wallace and Taylor 1959, 1960; Wallace and Desautes 1959, 1960), and then surveyed in the vicinity of Sheep's Pass (Wallace n.d.a, 1964). Wallace's two associates, George Kritzman and Roger Desautels, later surveyed in Indian Cove (Kritzman 1967). All three projects essentially concluded that monument sites were occupied in late prehistoric to early historic times by nomadic hunters and gatherers. Artifact inventories rarely varied. Brownware and buffware pottery, grinding stones, and hammerstones predominate, with significantly fewer chipped stone items present on sites.

Recent research projects include the reporting of a crevice cache containing a basket, olla, iron pan, and spirit sticks from Cottonwood Spring (T. J. King 1975); a series of small contract projects (Jefferson 1973a; Anderson 1973); a reevaluation of Campbell's Pinto Basin sites (Jefferson 1973b); and a survey in Cottonwood Spring to fulfill requirements for a master's thesis (Douglas 1979a, b, c).

Douglas sought to test the assumption that there was a population influx into the Cottonwood Spring area between A.D. 1300-1500 because of the desiccation of Lake Cahuilla. Douglas attributed all the prehistoric sites that he recorded to a post-A.D. 1500 period. He asserted that they represent only seasonal use of the monument, because all sites appeared to be on the surface or of shallow depth.

Culture History

Culture history sequences in southeastern California are fraught with controversy, especially those dealing with the earlier periods. Later periods are divided into gross time periods, with few diagnostic markers of time or tradition. Furthermore, these assemblages are known by a variety of names, since practically each major investigator invented an idiosyncratic terminology, and chronological divisions are confusing. Only broad divisions will be outlined here.

Pleistocene-Early Holocene. The terms "Malpais" and "San Dieguito" were originally suggested by Rogers (1939:6-22; see also Hayden 1976: 280-84) to define chopper-scraper industries, without projectile points, observed along the lower terraces of the Colorado River Basin. San Dieguito I occupation ends with the onset of the Altithermal, ca 7000 B.C. Artifacts from these complexes have been reported from late Pleistocene shorelines of Lake Cahuilla (Hayden 1976; Childers 1977). Waters (1980:63), however, asserts that no archeological material is associated with these lake stands.

Fluted projectile points similar to Clovis and Folsom points have been found throughout the California desert (Davis and Shutler 1969; Harrington 1948; Glennan 1971). These western Paleo-Indian assemblages are comparatively well defined as belonging to an early hunting tradition that was oriented to the exploitation of extinct fauna. No sites in the Joshua Tree region have been attributed to this period.

Desert Archaic (San Dieguito-Pinto-Amargosa traditions). Two important research questions relating to this period concern whether there was an occupational hiatus during the Altithermal (ca 6000-4000 B.C.) and whether there was an economic change from hunting to seed gathering (Wallace 1978; Coombs 1979). The importance of seed collecting is inferred from the number of ground stone implements now found on sites. Research has been hampered by the paucity of excavation data. Relative and absolute chronological relationships have been determined on the basis of surface distributions, relation to geologic features, and artifact weathering (Campbell and Campbell 1937; Rogers 1939; Hayden 1976).

Large, contracting, stemmed projectile points such as the Lake Mohave and Silver Lake points are a diagnostic trait of the early Archaic (Roger's San Dieguito II and III). In 1934, Elizabeth Campbell and Charles Amsden defined the early Archaic Pinto Basin complex (Campbell and Campbell 1935). Its most diagnostic attribute was the Pinto point. Rogers (1939:47-60) later redefined the industry to include Gypsum Cave material. Nonetheless, the complex, a hodgepodge of surface materials (Rogers 1966:107), has always been perplexing. Jefferson (1973b) has recently reexamined the Pinto Basin material and disputed the alleged association of these lithics with an ancient Pinto lake or with extinct fauna, as claimed by the Campbells.

In California, the late Archaic Amargosa assemblages were derived from the preceding Pinto Basin complex. These late preceramic assemblages are characterized by stemmed and barbed projectile points, bifacial knives, and drills in addition to a basic chopper and flake scraper industry (Rogers 1939; Lanning 1963:267-70).

Ceramic. Sometime around 500 B.C., village size and midden depth increase at sites, and small, triangular points and ceramics are introduced. There is evidence for the introduction of agriculture in some eastern desert areas.

This horizon has been variously labeled as Yuman (Rogers 1939), Patayan (Colton 1945:120; Waters 1978), and Hakatayan (Schroeder 1952, 1979). In historic times, River Yuman and Shoshonean Chemehuevi made Lower Colorado River buffwares, while Shoshonean Cahuilla, Cupeno, and Luseno, as well as Upland Yuman tribes, made Tizon Brown Ware. Three broad phases have been delineated on the basis of ceramic and projectile point types:

Period I, A.D. 500-1000. Small points indicate the introduction of the bow and arrow. Common point types include the Rose Spring series and the Cottonwood point (Lanning 1963). Ceramic hallmarks include Colorado Beige, Colorado Red-on-beige, and Colorado Red Wares.

Period II, A.D. 1000-1500. Yuman groups occupied the Cahuilla area at the beginning of the period but moved out when the lake dried up around 1450. An upland ware, Tizon Brown Ware, appears slightly before or at the beginning of this period and continues through the next period. Tizon Brown Ware occurred over much of southern California. Attempts to delineate chronological or spatial varieties of this ware have been futile. Lowland ceramic types include Salton Buff and Red-on-buff, Parker Buff, Tumco Buff and Red-on-buff, and Palomas Buff. Cottonwood and Desert Side-notched are the predominant point types.

Period III, A.D. 1500--post-1900. Colorado Buff and Red-on-buff were added to the ceramic inventory, while Palomas Buff and Parker Buff continued. These types were made into the late nineteenth and early twentieth centuries.

Prehistoric Sites Found on Survey

The majority of the prehistoric sites located on the 1979 survey have been tentatively dated by ceramic associations since only one diagnostic projectile point was found. Lack of comparable excavation material forced an emphasis on surface collections. Sites are roughly classed as assignable to Periods I, II, or III.

Fifteen prehistoric sites were recorded. These are divided into site classes comparable to those used by T. F. King (1975:60, 64) in his compilation of known sites in the Joshua Tree National Moument (table 1). Two of King's classes are not represented by our survey material-rock art and trails. One site type not discussed by King but recorded on survey consisted of isolated rock alignments. It is extremely difficult to assess the age and function of isolated rock piles or walls; they are as likely to be historic as prehistoric.

All site evaluations were based on nomination criteria for the National Register of Historic Places (U.S. Government Printing Office 1973).

Table 1. Prehistoric Site Types.

SITE NUMBER	SITE TYPE	DATE	DIMENSIONS (m)	DISTANCE FROM ROAD (m)
CA-RIV-359	grinding station	unknown	14 x 2	77
CA-RIV-1938	occupied shelter	A.D. 1000-1900	3 x 1 x 1	200
CA-RIV-1944	ceramic open	A.D. 500-1000	250 x 100	adjacent
CA-RIV-1945	ceramic open	A.D. 1000-1900	17 x 6	82
CA-RIV-1947	occupied shelter	A.D. 1000-1900	20 x 8	275
CA-RIV-1949	ceramic open	A.D. 1000-1900	2,160 x 100	adjacent
CA-RIV-1950	ceramic open	A.D. 1000-1900	70 x 55	50
CA-RIV-1951	ceramic open	post-A.D. 500	500 x 20	adjacent
CA-RIV-1954	cache	A.D. 1000-1900	12 x 12	83
CA-RIV-1959	caches, lithic scatter	A.D. 1000-1900		
CA-RIV-1960	lithic open	unknown	50 x 40	112
CA-RIV-1961	ceramic open	A.D. 1000-1900	120 x 200	adjacent
CA-RIV-1963	occupied shelter	post-A.D. 500	3 x 1.25	110
CA-RIV-1964	ceramic open	650 B.C.-A.D. 1000	150 x 70	adjacent
CA-SBr-4207	ceramic open	A.D. 1000-1900	10 x 15	140

Cache Sites. These are small shelters, crevices between rocks, or niches in boulder outcrops in which pottery vessels or other artifacts were cached. The Campbells often found "spirit sticks" guarding cache entrances.

CA-RIV-1959 is situated in the Cap Rock quartz monzonite boulder outcrop. Four rockshelters among the outcrop's many niches exhibited evidence of prehistoric use. Only a few sherds were found in the shelters, although one shelter appears to have had a broken Parker Buff cache vessel. A small lithic scatter was found near the northeast corner of the outcrop. All identified sherds collected were Parker Buff.

Cap Rock is a prominent tourist area and is the starting point of the Cap Rock Nature Trail. Graffiti, hearths, and recent trash litter the ground. Artifacts from the site undoubtedly have been removed, especially from the rock overhangs. The Campbells (Campbell 1931) collected extensively in this area and reported that they seldom found a cave without pottery. Cap Rock appears to be within their Lost Horse Valley District (T. F. King 1975:45), but site records for this district have been lost (Wallace n.d.a).

Owing to past disturbances, this site now lacks sufficient integrity to be considered eligible for nomination to the National Register of Historic Places.

At CA-RIV-1954, sherds of a Parker Buff vessel were cached on the northwest side of a collapsed rock overhang. The overhang is part of a boulder outcrop in the Hexie Mountain foothills at the end of the Pinto Basin. Some sherds appear to be buried by rockfall.

Although the site is small and probably surficial, it represents a very common site type in this area. It is eligible for nomination to the National Register.

Occupied Shelters. These are shallow caves and overhangs with midden, sherds, lithics, fire-cracked rock, and other habitation debris.

CA-RIV-1938 is a small rockshelter on the southeast side of a boulder-strewn wash in Sheep's Pass. A retaining wall, ca 1 m long by 35 cm high, was constructed near the shelter's opening. Soil appears to have been brought in to make a level surface behind the wall. Three Tizon Brown Ware sherds were collected.

CA-RIV-1963 is a small rockshelter within the Jumbo Rocks quartz monzonite outcrop. Five small sherds were scattered on the shelter floor; no lithics were observed. The floor has several centimeters of rock detritus, plant remains, and rodent feces. Talus deposits appear deep.

CA-RIV-1947 is a small rockshelter at the base of the east canyon wall where Wood Spring Wash joins Cottonwood Canyon. The overhang area is 4 m long by 1 m wide. Sherds and lithics are lightly scattered within a small talus area. Soot covers the shelter's ceiling. The ashy shelter floor is littered with Tizon Brown Ware and Parker Buff sherds and a few lithics. Rocks on the shelter floor may be disturbed hearths.

There is also a very light scatter of historic trash on the talus. A freight road formerly went up Wood Spring Wash to Cottonwood Spring.

All three rockshelters are considered eligible for nomination to the National Register. They exhibit significant deposits from late prehistoric and possibly early historic periods.

Ceramic Open Sites. These sherd and lithic scatters usually have shallow midden deposits. Previously recorded sites of this type tend to have higher concentrations of ceramics and ground stone than lithics (Wallace and Desautels 1960; Campbell 1931). They are found more commonly in the high desert than in the low desert; this, however, may reflect the fact that fewer surveys have been conducted in the low desert.

CA-RIV-1961 is an open habitation or campsite located on a low, sandy rise in Queen Valley. Lithics, mostly thinning flakes, predominate, but a few Tizon Brown Ware sherds were observed. Five metates were located on the south side of the rise, as were a bone scatter and a caved-in midden area. Route 2 cuts through the site's far northeast side, but materials on the opposite side of the road, in a drainage area, appear to be sheetwash. A wide variety of lithic materials was used at this site, including several quartzites, cherts, chalcedonies, quartz, jasper, and andesite.

As mentioned above, most high desert sites in the monument are surficial, with abundant sherds and few lithics. This site not only has an unusual artifact inventory, but also appears to have subsurface materials.

CA-SBr-4207 is a small scatter of about 30 sherds. All collected ceramics are Tizon Brown Ware. Only two flakes, both of rhyolite, were observed. The site, located in a narrow valley within the Pinto Mountains, is dissected by small washes. It is unknown if subsurface materials exist.

CA-RIV-1964 is a thin, widely dispersed sherd and lithic scatter. Cores; primary, secondary, and thinning flakes; chopper tools; a biface; and a Humboldt concave-base point were observed. Two metates and a few Parker Buff and Colorado Buff sherds were also present.

The site lies on a terrace near a high-banked wash that drains into the Pinto Basin. The Pinto Basin road bisects the site, but most artifacts are located on the north side of the road. A metate is located adjacent to the south edge of the road.

For the Humboldt point, Clewlow (1967) suggests a date between 3000 B.C. and 1500 B.C., although Aikens (1970) posits a wider temporal distribution, ca 6000 B.C. to 650 B.C. Colorado Beige pottery was introduced in this area around A.D. 500, and Parker Buff first appeared around A.D. 1000. This site appears to have been occupied for a long period, but whether it was occupied continuously or, more likely, intermittently cannot be ascertained by surface inspection.

CA-RIV-1944 is a large but sparsely distributed sherd, lithic, and ground stone scatter, with artifact types differentially segregated. The site is located on an alluviated terrace on the south end of the narrow Cottonwood Canyon. One large wash flows on the west canyon floor; a terrace with several small washes dissecting it lies to the east. Lithics are found within a 30 m^2 area on the east canyon slope; sherds lie within a small locus on a flat terrace west of the wash; and grinding slicks were observed on boulders on the canyon slopes and along the terrace. A collapsed rock cairn was observed on the west canyon slope near the wash. The presence of Colorado Buff sherds indicates an occupation date between A.D. 500 and 1000.

CA-RIV-1945 is located on the bank of a large wash that flows into Cottonwood Canyon. Feature 1 is comprised of about 15 rocks clustered within 2.5 m^2 area, with ash, burnt bone, and a few Parker Buff sherds also noted. This feature may be a disturbed roasting pit. Across the wash lies feature 2, a thin scatter of Tizon Brown Ware sherds and a few flakes. A grinding slick located 175 m from feature 1 near the Pinto Basin road was recorded with this site.

CA-RIV-1949 is an area of widely dispersed sherds and lithics. It is located on the alluvial fan of the Cottonwood and Eagle mountains above Shavers Valley. This fan is heavily dissected by small washes. All artifacts in this enormous area (ca 216,000 m^2) may be secondary deposition from sites in Cottonwood Canyon and elsewhere. Several mining prospect holes and historic rock piles occur within the prehistoric site; these were plotted as isolated features. Roasting pits have been observed in the immediate vicinity (Yvonne Stewart: personal communication), but none was found within the site boundaries. No prehistoric features or concentrations were noted.

CA-RIV-1950 consists of four depressions with an associated dense concentration of sherds, lithics, and bones. The site lies on an elongated rise overlooking a large wash that dissects the Cottonwood Mountains alluvial fan. Site boundaries are sharply delineated on three sides. On the southern, downslope side, a sparse artifact scatter extends for at least 300 m, probably as a result of erosion.

Three of the depressions are 6 m in diameter; the fourth extends 14 m by 10 m. All are 15 cm to 35 cm deep. Artifacts are concentrated in and near the depressions. Fire-cracked rock litters the surface, as do larger stones whose presence may indicate buried masonry structures.

Tizon Brown Ware and Parker Buff sherds were collected. Cores, primary flakes, scrapers, and bifaces were noted, but decorticated flakes were the most common lithic type observed. Burnt animal bone occurred in a midden area near the depressions. No ground stone was seen.

This site is likely to have extensive subsurface material, as the depressions may be the locations of pithouses. Few habitation sites have been recorded for the monument, which has been widely characterized as having been seasonally occupied by nomadic hunters and gatherers (Wallace 1964). Excavation of this site may reveal that permanent sites once existed in this area as well.

CA-RIV-1951 is an extremely dispersed sherd and lithic scatter located on the west side of Cottonwood Canyon. The site covers a long, narrow rise on the canyon floor. No features or concentrations were observed within the scatter. Ceramics are more plentiful than lithics.

All but one of the ceramic open sites are eligible for nomination to the National Register, either individually or as parts of a district. Material from CA-RIV-1949 appears to represent a "use area" more than a discrete activity area or "site." The material may all be secondary deposition from sites upslope. For these reasons, this location lacks sufficient integrity to warrant nomination. The other sites represent a variety of sites considered to possess culturally significant features. Two of them, CA-RIV-1961 and 1950, have indications of extensive subsurface materials. On the other sites, testing would be necessary in order to determine if subsurface materials exist.

Lithic Open Sites. Sites of this type are usually found in the Pinto Basin and are rarely reported in the monument's high desert valleys. Such sites have only chipped and ground stone tools and debris. They are usually surficial.

At CA-RIV-1960, chipped stone debitage is sparsely scattered at the base of a low, sandy ridge in Queen Valley. Quartz and chert decortication flakes were observed. No artifact concentrations or features were found. The site appears to be surficial, but this would have to be determined by testing. Insufficient information exists to determine eligibility for the National Register. Lithic scatters are rare, however, in the high desert valleys, and CA-RIV-1960 may represent a unique site type.

Grinding Stations. Bedrock mortars and metates, common on habitation sites in the region, were also found in isolation during the survey.

CA-RIV-359, "Indian Cave," is located in a large overhang of three monzonite boulders that form a rough, natural lean-to. Inside the overhang are 12 large boulders. Two have grinding cups, and one has a flat grinding surface. No other artifacts were observed. This site was previously recorded by Wallace (n.d.a; 1964) during his survey of Sheep's Pass. Wallace observed, but did not collect, a metate, a cobble pestle, and a mano; these artifacts were not seen during the 1979 survey. Wallace also observed several "relic-hunters' pits."

This site, located at the entrance to a hiking trail and marked by a National Park Service sign explaining aboriginal use of the overhang, has been altered by tourist activities. Recent campfires have sooted the overhang and blackened the bedrock mortars. Movable ground stone objects seem to have been carried away during the 20 years since Wallace visited the site. There are some graffiti. Consequently, it is unlikely additional information could be obtained from this site.

Isolated Artifacts

Ceramics. Forty-seven isolated sherd locations were collected (table 2). Twenty-five percent of the sherds were Tizon Brown Ware, and 73 percent were Parker Buff. Both ceramic types date between A.D. 1000 and post-1900. Tizon Brown Ware was an upland Yuman ware, while Parker Buff was manufactured by lowland Yumans. Both were widely traded throughout southern Arizona, Nevada, and California. A Tumco Buff (A.D. 1000-1500) sherd and a Colorado Beige (A.D. 500-1050) sherd were also collected. The wide date ranges of these wares illustrate how difficult ceramic dating is in the Joshua Tree area. Ninety-eight percent of the isolated sherds can be dated only to some time within the last millennium, and thus provide little significant information beyond that of a broad horizon marker.

Lithics. Fifty-eight chipped stone artifacts were collected (table 3), all but three of which were flakes. For purposes of description, flakes were divided into primary, secondary, and thinning flakes. Additionally, flakes that showed wear were classified as utilized flakes, and resharpened flakes were classified as retouched. Three cores were also collected.

Three manos were collected (table 4). One is a multipurpose tool, with three use edges for grinding and pounding.

Rock Features

Three rock alignments of unknown age or function were recorded during the survey (table 5).

At CA-RIV-1962, one short cobble wall was built between two large monzonite boulders in the Jumbo Rocks outcrop area. About 50 cobbles, three to four courses high, comprise the wall, which is 1.4 m long, 30 cm wide, and between 30 cm and 70 cm high. IA-63, a historic or modern brand pecked on a boulder, lies 20 m to the south, and CA-RIV-1963, a

Table 2. Isolated Ceramic Artifacts.

IA	DESCRIPTION	COMMENTS
Package 142: Salton View to Cap Rock		
6	1 Parker Buff	
14	2 Tizon Brown Ware	
20	4 Parker Buff	
Package 198: Cap Rock to Pinto Wye		
31	1 Parker Buff	
33	1 Parker Buff	
35	2 Parker Buff, 1 unidentified	
38	7 Parker Buff	
56	1 Parker Buff, 1 Tizon Brown Ware	
57	1 Tizon Brown Ware	
No package number: Pinto Wye to Twentynine Palms Entrance		
73	1 Parker Buff	
75	1 Parker Buff	
77	1 Tizon Brown Ware	
84	1 Parker Buff	
92	1 Tizon Brown Ware	
Package 173: Pinto Wye to Fried Liver Wash		
96	2 Tizon Brown Ware; 1 unidentified	
100	1 Parker Buff	
101	1 Tizon Brown Ware	
102	1 Tizon Brown Ware	
109	1 Parker Buff	
110	1 Parker Buff	
122	1 unidentified	
125	1 Parker Buff	
138	23 Parker Buff	1 vessel
Package 110: Fried Liver Wash to Smoke Tree Wash		
156	1 Parker Buff	
157	1 Parker Buff	
159	1 Tizon Brown Ware	
160	1 Parker Buff	
161	1 Colorado Buff	
163	1 Tumco Buff	
167	1 Parker Buff	
168	1 Tizon Brown Ware	

Table 2--Continued

IA	DESCRIPTION	COMMENTS
Package 110--Continued		
176	1 Tizon Brown Ware	
177	1 Parker Buff	
178	1 Tizon Brown Ware	
Package 111: Smoke Tree Wash to South Boundary		
187	1 unidentified	
188	1 Tizon Brown Ware	
189	1 Tizon Brown Ware	
190	1 Tizon Brown Ware	
191	1 Parker Buff	
193	2 Parker Buff	
203	1 Parker Buff	
204	4 Tizon Brown Ware, 1 Parker Buff	
208	1 unidentified	
214	1 Tizon Brown Ware	
219	2 Tizon Brown Ware; 1 Parker Buff	
236	1 unidentified	
237	6 Parker Buff, 1 unidentified	

Table 3. Isolated Chipped Stone Artifacts.

IA	MATERIAL	CLASS
Package 142: Salton View to Cap Rock		
1A	chert	secondary flake
5	quartzite	primary flake
11	chert	retouched secondary flake
12	obsidian	utilized secondary flake
13	chert	retouched secondary flake
22	quartzite	secondary flake
Package 198: Cap Rock to Pinto Wye		
43	quartzite	primary flake
44A	quartzite	secondary flake
44B	chert	utilized secondary flake
46	chert	primary flake
47	quartzite	primary flake
48A	quartzite	secondary flake
48B	quartzite	secondary flake
49	quartzite	secondary flake
51	chalcedony	secondary flake
52	quartzite	retouched flake
55	quartzite	retouched flake
56C	chert	primary flake
61	quartzite	utilized thinning flake
No package number: Pinto Wye to Twentynine Palms Entrance		
64	chert	thinning flake
65	chert	utilized secondary flake
78	igneous	secondary flake
210	quartzite	secondary flake
Package 173: Pinto Wye to Fried Liver Wash		
104	chalcedony	secondary flake
106	quartzite	primary flake
107	chalcedony	secondary flake
113	quartzite	utilized secondary flake
115	quartzite	secondary flake
116	quartzite	secondary flake
118	jasper	utilized secondary flake
127A	quartzite	secondary flake
127B	quartzite	primary flake
127C	quartzite	utilized secondary flake
130	quartzite	primary flake
131	quartzite	utilized primary flake

Table 3--Continued

Package 173--Continued

133	quartzite	utilized secondary flake
134	quartzite	utilized secondary flake
135	quartzite	core
136	quartzite	core
137	quartzite	retouched core tool
140	quartzite	utilized secondary flake
146	jasper	retouched secondary flake

Package 110: Fried Liver Wash to Smoke Tree Wash

155	quartzite	secondary flake
162	chert	thinning flake
164	quartzite	secondary flake
170	quartzite	secondary flake
171	quartzite	utilized secondary flake
172	quartzite	primary flake
174	basalt	secondary flake
175	quartzite	secondary flake

Package 111: Smoke Tree Wash to South Boundary

194	quartzite	secondary flake
196	quartzite	secondary flake
199	quartzite	secondary flake
223	quartzite	secondary flake
233	quartzite	utilized secondary flake
234	quartzite	utilized secondary flake

Table 4. Isolated Ground Stone Artifacts

IA	MATERIAL	DESCRIPTION
Package 169: Fried Liver Wash to Smoke Tree Wash		
169	quartzite	mano fragment
Package 111: Smoke Tree Wash to South Boundary		
206	quartzite	mano
209	quartzite	mano fragment

Table 5. Rock Features.

FIELD NUMBER	SITE TYPE	DIMENSIONS (m)	DISTANCE FROM ROAD
CA-RIV-1962	rock wall	1.4 x 0.3 x 0.3-0.7	110 m
CA-RIV-1955	rock wall	2 x 1 x 1	15 m
CA-RIV-1946	rock wall	18 x 1	100 m

rockshelter, is located 40 m to the northeast. No artifacts were found in association with the wall.

CA-RIV-1955 is a rock alignment built into a rock outcrop at the edge of Porcupine Wash. The alignment is 2 m long by 1 m wide and 1 m high. Porcupine Wash, 50 m east of the site, is bordered by small quartz monzonite boulders. No artifacts were observed.

CA-RIV-1946 is an L-shaped rock wall built into a low rock ridge overlooking a wash that drains into Cottonwood Canyon. A prehistoric site, CA-RIV-1945, lies 150 m to the south. The north-south wall segment is 15 m long, and the east-west segment 3 m long. The wall is about 1 m high. No artifacts were found in association, but a National Park Service marker, cemented into rock, is near the wall.

These sites are unlikely to yield significant information and are not considered eligible for nomination to the National Register.

Summary

Site frequency in the monument area is very low, about one site every 4 linear mi. This figure is misleading, however, since 6 of the 15 sites cluster in Cottonwood Canyon and its alluvial fan. This distribution corresponds well with the Cahuilla settlement pattern. Cahuilla villages were located in or near canyon mouths or in valleys. Such village sites were at an optimal distance from high- and low-altitude plant and animal resources (Cultural Systems Research, Inc. 1979:8).

Sites were found in all three plant communities existing in the monument. Too few sites were found to allow generalizations about habitat selection, other than that sites tend to be in open valley grassland or creosotebush habitats or in desert washes and rocky canyons (table 6).

Over half of all prehistoric sites recorded were ceramic open sites. Of these, almost all dated to Periods II and III.

Pleistocene-Early Holocene. None of the sites found dated to this early period.

Desert Archaic. None of the sites found can be definitely attributed to this period. The Humboldt point found at CA-RIV-1964 indicates that this site may have been occupied toward the end of this period or at the beginning of the next.

Ceramic Period I. CA-RIV-1964 and 1944, both of them open sites, have ceramics dating to this time period.

Ceramic Periods II and III. Most sites have Tizon Brown Ware and Parker Buff sherds. These ceramic wares were in use during the last millennium of aboriginal occupation in the monument area. Unless historic Anglo artifacts are also found, it is impossible to date a site as pre- or postcontact.

Table 6. Sites Classed by Plant Community and Habitat Location.

SITE NUMBER	SITE TYPE	HABITAT	COMMUNITY
CA-RIV-359	grinding station	grassland	Joshua tree
CA-RIV-1938	occupied shelter	desert wash	Joshua tree
CA-RIV-1944	ceramic open	rocky canyon	creosotebush
CA-RIV-1945	ceramic open	rocky canyon	creosotebush
CA-RIV-1947	occupied shelter	rocky canyon	creosotebush
CA-RIV-1949	ceramic open	desert wash	creosotebush
CA-RIV-1950	ceramic open	desert wash	creosotebush
CA-RIV-1951	ceramic open	rocky canyon	creosotebush
CA-RIV-1954	cache	creosotebush	creosotebush
CA-RIV-1959	cache	grassland	Joshua tree
CA-RIV-1960	lithic open	grassland	Joshua tree
CA-RIV-1961	ceramic open	grassland	Joshua tree
CA-RIV-1963	occupied shelter	grassland	pinyon-juniper
CA-RIV-1964	ceramic open	desert wash	creosotebush
CA-SBr-4207	ceramic shelter	creosotebush	creosotebush

Chapter 4

HISTORIC SITES

Historic activities in the monument area focused on mining, cattle ranching, homesteading, and, most recently, tourism and Park Service activities. The historic sites recovered during the road corridor survey reflect these activities.

Although background studies have been done at two historic period sites, the Lost Horse Mine (Levy 1969) and Keys' Ranch (Hickman 1977), no archeological survey or excavation of historic sites has been conducted in the Joshua Tree region. Patricia Parker (1980) has prepared an overview of the monument's historic resources that is based on written documents only. The following summary has been extracted primarily from Parker (1980) and Hickman (1977).

Periods of Historic Occupation

Early History. The peripheries of the Joshua Tree National Monument area were visited by Spanish and Mexican explorers, such as Garces in 1776 and the Romero-Estudillo expedition of 1822-26. The Williamson expedition explored this region in 1853, searching for railroad routes (Williamson 1856; Antisell 1857), and the 1855-56 Washington and Green expedition stopped at Twentynine Palms. Unfortunately, there are virtually no documents specific to the monument prior to the 1870s, nor have sites relating specifically to Spanish or Mexican activities been located, although local history has it that miners were working in the monument before the 1870s.

Three Indian groups--the Chemehuevi, the Serrano, and the Cahuilla --were present in the monument during the 19th century. No detailed descriptions of Indians living in the Joshua Tree area prior to 1909 are known. During the early 20th century Indian agents, most notably Twenty-Nine Palms Reservation Agent Clara True, began documenting Indian occupation. Most observations were made at the Twentynine Palms Oasis, which was occupied mostly by Chemehuevi until 1913.

1870-1900. During the early 1870s, cattlemen began opening up the high desert as pasture. At the same time, miners, on a small-scale, explored the mountains and established several mining districts. Mining did not become a stable, profitable activity until the 1890s, after the discovery of the Desert Queen and Lost Horse mines and the establishment of the Pinyon Well Mill. A boom-bust pattern was common. The Twentynine Palms Mining District was prominent during the 1870s, but its fortunes ebbed during the 1880s as the Old Dale District boomed. Documents indicate that both mining and ranching communities were occupied exclusively by males during this early period.

1900-1917. These years mark the heyday of both regional mining and stock raising. Principal participants in the development of the Joshua Tree area were the Langs (Lost Horse Mine), McHaneys (Desert Queen Mine), the Ryans (Lost Horse Mine), and William Keys (Desert Queen Mine). During this period, Keys' Ranch, Twentynine Palms, New Dale, Ryan's Ranch, and Gold Park were significant centers of activity. There was, however, at least one unwanted by-product of these boom years. As more and more mines and milling sites were developed, competition arose between cattlemen and miners over scarce water resources.

Mining activities came to an abrupt halt during World War I and did not resume until the 1930s. Abandoned buildings, shafts, machinery, and domestic refuse littered the monument area.

1918-1929. The void left by the miners was filled by homesteaders who arrived during the 1920s. Twentynine Palms developed into a stable community during this period. Social arrangements changed as women settled alone or with children. The homesteaders were mostly World War I veterans living off pensions or engaged in service enterprises. Many of the abandoned mines were scavenged by these newcomers. Intensive road construction marked another change; already existing major roads were paved and new roads were built. Among the latter was the road to Salton View, built in 1925 by William Keys in order to facilitate the operating of the Hidden Gold Mine.

1930-1944. During the Depression, the Joshua Tree area experienced another boom. By 1938, 150 gold mines were in operation. Twentynine Palms expanded, and surrounding communities began to grow.

In 1936, the creation of Joshua Tree National Monument wrought two great changes. Mining and ranching declined, while a new industry--tourism-began to develop. The granting of monument status to the area meant that mining activities had to center on the reworking of established claims rather than on the developing of new mines. Also, cyanide processing now made the reworking of mine tailings profitable. The resulting flurry of mining activity in the monument area lasted until World War II, when all gold mining was suspended.

Cattle grazed in and around Lost Horse Valley and Cottonwood Spring during the 1930s. Grazing in the monument was restricted, however, by the 1940 Taylor Grazing Act, and, after World War II, eventually eliminated.

The outstanding regional development during this period was the construction of the metropolitan aqueduct to supply water to Los Angeles and other southern California cities. Construction started in 1932 and ended in 1940. An important result of the aqueduct was the building of paved roads to construction camps in nearby mountains. This road provided easy access to mineral deposits in previously inaccessible areas of the monument (California State Mining Bureau 1945:122).

1945-Present. As the desert became a popular and accessible recreation area, the expansion of the towns of Yucca Valley, Twentynine Palms, and Joshua Tree was promoted. The establishment of military installations nearby also contributed to local growth. Tourist services became more available, thus increasing visitor usage.

During the war, older mining properties were looted by scrap metal dealers and vandals. In the 1950s, however, prospecting strategy switched to an emphasis on local deposits of uranium, thorium, and other rare earths. The most extensive mining operation in Joshua Tree's history is the present-day Kaiser iron mine on Eagle Mountain.

Historic Period Sites

The road corridor survey located 12 historic or modern period sites and 116 isolated artifacts or features. These can be associated with activities and events from the turn of the century to the present. Major regional economic activities, such as mining, construction, and tourism, are represented.

Several recent (less than 50 years old) sites and features were recorded for either identification or management purposes. When the field crew was unable to assess a site, materials were collected for laboratory identification. Not all of the sites recorded proved to be significant by National Register criteria. Rock piles that were obviously modern were recorded for management purposes; years from now, the wood or charcoal that identifies rock piles as recent will be obliterated, and it might be difficult then for archeologists to distinguish historic from prehistoric rock features.

Few historic site types were present (table 7). As expected, trash piles and scatters comprise the most common sites.

Mines. CA-SBr-4208, a large, multifeatured mining area, is the most significant historic site recorded during the survey. Mine shafts, prospect holes, dugouts and other habitation areas, rock cairns, roads, and trash dumps mark the Anaconda Mine (figures 9 and 10). This mining camp operated during both major boom periods--just before World War I and again in the mid-1930s. Although the date of its opening is unknown, the mine was in operation by 1916 (Patricia Parker: personal communication; Miller 1965:28). The Anaconda Mine was idle in 1931 (O'Neal 1957:156; Parker 1980), but was active again during the late 1930s and early 1940s (Joshua Tree National Monument files). Phil Sullivan, Johnny Wilson, and Billy McHaney owned the mine during the latter period.

Mining sites represent the dominant form of historic cultural resources within the monument (Parker 1980). The Anaconda Mine offers research potential because of the length of its operation and because both work-related and habitation structures and artifacts are present. Owing to the long period of mining operations here, it may be possible to assess changes in mining technology from the early 1900s to World War II, a period that witnessed rapid technological advancement. The mine is only 5 mi. from Twentynine Palms. What was the relationship of the mine to the town's growth? Where were supplies procured, and to what extent did inhabitants depend on local resources as opposed to imported goods? Questions concerning social interaction can be addressed. Documentation indicates that mines were male-dominated. How would this be reflected in artifact inventories or living arrangements?

This site is eligible for nomination to the National Register of Historic Places. Construction impacts would necessitate extensive excavation and historical documentation.

CA-RIV-1952 is a small mining area. Two mine shafts and their

Table 7. Historic Site Types.

SITE NUMBER	SITE TYPE	DATE	DIMENSIONS	DISTANCE FROM ROAD
CA-RIV-1957	trash scatter	1900-1925	25 m x 15 m	15 m
CA-RIV-1958	grave	1925	1 m x 70 cm	12 m
CA-RIV-1959	"grave"	1973	1 m x 4 m	100 m
CA-RIV-1937	trash scatter	1900-1930	10 m x 10 m	90 m
CA-SBr-4208	mine	1916-1940	840 m x 600 m	20 m
CAl-RIV-1965	graffiti	post-1940	40 m x 60 m	27 m
CA-RIV-1952	mine	1930s	100 m x 40 m	5 m
CA-RIV-1953	rock feature	1967?	25 m x 30 m	5 m
CA-RIV-1956	grave	1905	2.8 m x 1.3 m	120 m
CA-RIV-1943	trash scatter	1930-1970s	50 m x 35 m	30 m
CA-RIV-1939	trash scatter	post-1930s	50 m^2	87 m
CA-RIV-1948	rock features	1930s?	125 m x 150 m	120 m

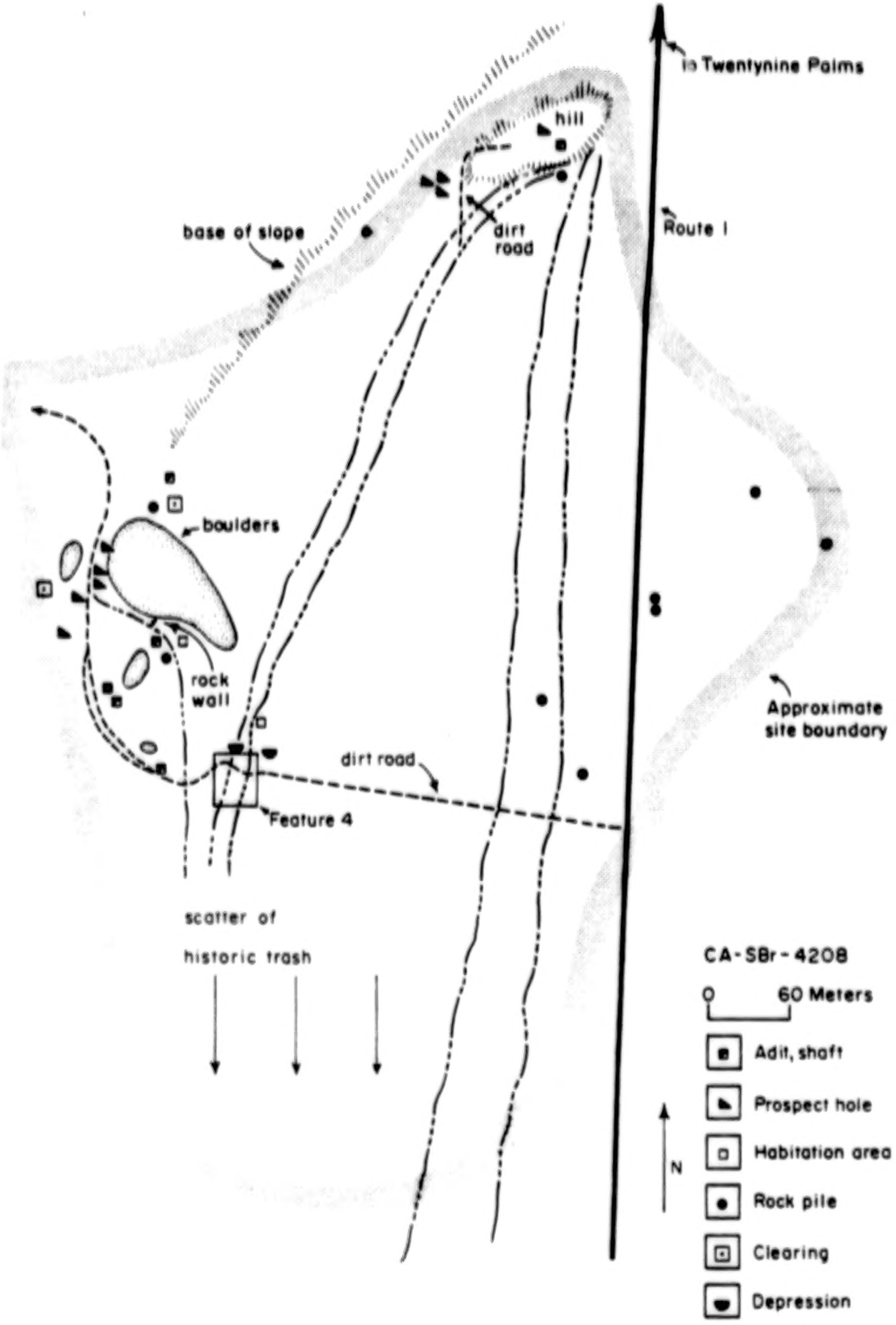

Figure 9. The Anaconda Mine - Overview

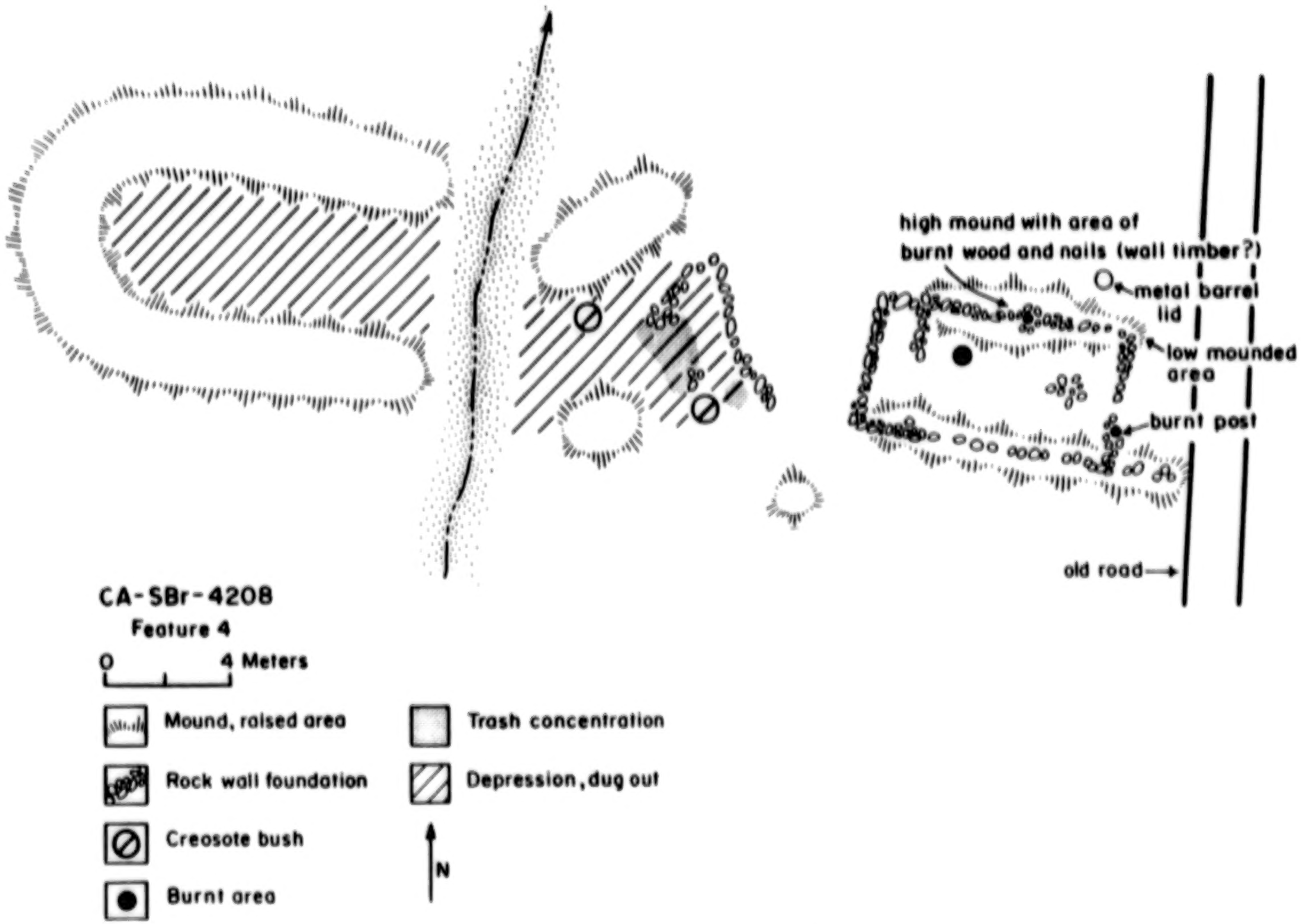

Figure 10. The Anaconda Mine - Habitation Complex

tailings are located on the north side of a ridge overlooking a large wash. A dirt road connects the site with the Pinto Basin Road, while another dirt road cuts the upper slope. A footpath connects the two shafts. One shaft opening has been grated. A few pieces of clear glassware were the only artifacts observed.

This was the Gold Point Mine (Patricia Flanigan: personal communication). Five men served as the mining crew here in 1935, but the mine was idle in 1938 (Parker 1980:table 3). It is not known when the mine first opened.

Gold Point Mine represented a different type of mine than the Anaconda--less affluent, shorter-lived, and with no evidence of onsite habitation. Research questions to be addressed here could focus on short-term procurement and mining technology during the 1930s. More thorough historical documentation is needed to assess this site's significance. Mitigative measures would require mapping with alidade or transit and artifact collection.

Graves. CA-RIV-1958 marks the grave of Johnny Lang, one of Joshua Tree's colorful pioneers, to whom many legends cling. In 1891 or 1892, Johnny Lang and his father George moved to Cochella with the intention of raising cattle in Lost Horse Valley. These were the boom years of the Old Dale mining camps, however, and Lang soon began prospecting. How Johnny Lang obtained claim to the Lost Horse Mine is the subject of legendary accounts. William Keys (who did not arrive in the area until 1910) asserted that Lang bought the claim for $1,000 from Frank Diebold, and then took two partners to protect his claim from gold-hungry cowboys. In the process of locating their claim, the group lost their horses, the incident giving name to the mine.

In 1895, Lang's partners sold their interest in the mine to the Ryan brothers. Shortly thereafter, the Ryans accused Lang of highgrading and forced him to sell out. In 1897, Lang opened the first saloon in Twentynine Palms. Between 1896 and 1899, 80 percent of the mine's wealth was extracted. Profits rapidly decreased afterwards, and the mine was abandoned in 1923. During this time, Lang lived in Johnny Lang Canyon near the mine, surviving in his later years by selling copper scrapings from abandoned mill plates to William Keys.

In January 1925, Lang tacked on his cabin door a note saying that he had "gone for grub." His mummified body, his hand clutching a pouch containing only a square inch of bacon and dusting of flour, was found beside the road two months later. Keys, Frank Killer, and Jeff Peedon, who were building the road to Salton View, buried Lang where he lay. New legends began with his death. One story relates that hundreds of dollars' worth of amalgam found in Lang's pockets was buried with him. According to another tale, Lang buried a crucible filled with stolen amalgam, worth thousands, near his cabin (Joshua Tree National Monument files; Levy 1969; Miller 1965; O'Neal 1957:71-73).

Lang's grave is outlined in slab boulders and fired bricks. A rough-cut granite tombstone reads:

JOHN LANG
DIED HERE
BURIED BY W
F KEYS FRANK
KILLER JEFF
PEEDON MAR
25, 1925

The foot of the grave lies 12 m west of the Salton View Road near the historic road (IA-9) to the Lost Horse Mine.

Ordinarily, cemeteries or graves of historical figures are not considered eligible for the National Register. Such a feature will qualify, however, if it is the grave of a historical figure of outstanding importance, and if there is no other appropriate site or building directly associated with his life. Johnny Lang was not a historical figure of national importance, but he was prominent in regional history. He developed one of the earliest and most productive mines in the Joshua Tree area. The location of Lang's cabin is unknown, and no other site commemorates him. For these reasons, Lang's grave should be protected.

CA-RIV-1959 is located within the Cap Rock boulder outcrop. On the north side of the outcrop is a burned area under a shallow rockshelter. Graffiti painted on the shelter roof, such as "The bird flies high over the San Andreas Fault" and "Grevious Angel, Rest in Peace," mark a bizarre incident in Joshua Tree's history. On September 19, 1973, Gram Parsons, rock singer and a former member of the musical group, the Byrds, died. Fans stole his body from the Los Angeles International Airport, brought his remains to Cap Rock, and attempted to cremate his casket and body. Authorities retrieved the body, and the Park Service has obliterated the cremation site. Since then, fans have decorated this shelter with graffiti in memorial to Parsons. "Grevious Angel" was his last album title.

This site does not meet eligibility requirements for the National Register. It is less than 50 years old and does not commemorate a person of outstanding national or regional importance.

CA-RIV-1956 is the site of the grave of Matt Riley, who died of thirst in 1905. Riley and Henry Kitto, miners at the OK Mine in the Dale Mining District, decided to celebrate the fourth of July by walking to Mecca, 60 mi. away. They had one canteen of water. After 12 mi., Kitto gave Riley the canteen and returned to the mine. On July 6th, a Brooklyn Mine teamster found Riley's body under a bush near the Mecca/Cottonwood Spring road fork. Footprints indicated that Riley had been within 200 yards of Cottonwood Spring when he turned back to New Dale. Temperatures of 109°, 114°, and 119° F. were recorded for July 3, 4, and 5 in nearby Thermal, California (Riverside Daily Press, July 13, 1905). Miller (1965: 34) claims that this adventure began in the Dale saloon, and that Riley had a bottle of bourbon, not a canteen of water, for sustenance.

Matt Riley's grave is outlined in small rocks. A wooden board supported by metal posts serves as a headstone.

Although the story of Riley's death is often recounted in popular literature concerning the monument, he was not a person of regional importance. His grave is more than 50 years old, however, and is one of the few sites that mark an event from this early period of the monument's history. Riley's grave should be afforded the same protective measures as Lang's.

Trash Scatters. CA-RIV-1957 is a small scatter of tin cans, glass, and domestic items. Artifacts were deposited in a dump on a low ridge near a monzonite boulder outcrop that overlooks a small wash. Most of the cans are meat or beverage containers. On the basis of occurrence of hand-molded bottles, purple glass, and soldered- and crimped-seam cans, the scatter probably dates between 1900 and 1915. The site may be associated with a section marker, dated 1912, northwest of the site or with the construction of the Salton View Road in 1925.

This site contains artifacts that indicate it is old enough to meet

National Register criteria. It appears to be a surficial scatter, but testing would have to confirm this and determine if other activities were involved. Further investigation involving controlled artifact collecting, mapping the site with alidade or transit, and testing for subsurface material is necessary to determine the sites eligibility for the National Register.

CA-RIV-1937 is a dump of domestic refuse consisting of a small concentration of tin cans and bottle fragments. It is located at the base of a boulder outcrop in Lost Horse Valley near Sheep's Pass. Trash is scattered over a 10-m-diameter area, but most artifacts are clustered within an area of 1.5 m^2. The cans held a variety of foodstuffs, including milk, meat, sardines, tobacco, and spices. Only 3 of the more than 40 cans observed had soldered seams. Two hand-molded bottle necks of amber and clear glass and a black glass bottle base were collected. The artifacts appear to date between 1900 and 1930, probably toward the later end of this range.

Additional information is needed to assess this site's significance.

CA-RIV-1943 is a small trash dump in a wash near the Cottonwood Spring Visitor Center. The dump contains a wide variety of artifacts, including crimped-seam cans, liquor bottles and cans, window glass, condiment bottles, nails, spice cans, syrup bottles, soda pop bottles, and toothpaste tubes. The material dates after the 1930s and may be as recent as the late 1960s. It appears to have been dumped either by tourists or by park personnel. This site is too recent to be considered eligible for nomination to the National Register.

CA-RIV-1939 also is a small historic trash scatter. Crimped-seam cans and a few glass fragments, all postdating the 1930s, were the only artifacts observed. This site, like CA-RIV-1943, is too recent to be considered eligible for nomination to the National Register.

Graffiti. CA-RIV-1965 consists of graffiti pecked into a large boulder outcrop 0.35 mi. southeast of White Tank Campground. These boulders are located next to an exhibit explaining the Mohave-Colorado Desert transition zone. Most of the motifs are dates and initials. Some letters have been purposely obliterated; others are exfoliating. Dates include "1853," "1940," and "54" (the last almost obliterated).

The 1853 date appears to be fraudulent; it looks fresh in comparison to nearby, more weathered initials and dates. Monument personnel were unaware of the date even though it is pecked into a prominent boulder at an exhibit area. All of the glyphs appear to relate to tourist activities. Campfires and recent trash indicate heavy visitor use, and the exhibit is quite close to a major park campground. This site is too recent to be considered eligible for nomination to the National Register, and has little potential for yielding significant information.

Rock Features. At CA-RIV-1953, boulders have been stacked in a rough corner, possible for a lean-to or a sheltered hearth. The feature is covered by a large pack rat nest. Crimped-seam cans are scattered about the site, which is located in Wilson Canyon on a ridge overlooking an upper tributary of Pinto Wash. A series of thin wooden stakes was found along the site edge next to the Pinto Basin Road. A National Park Service metal stake, labeled 46-1967-272549, was driven into a boulder near the stakes. The site is unlikely to yield significant information and may be quite recent (post-1940s). It is not considered eligible for nomination to the National Register.

CA-RIV-1948 consists of 20 small pits and 8 rubble piles. The site is located on an alluvial fan that is crossed by numerous washes. Six crimped-seam cans, sparsely scattered glass fragments, and a few pieces of sheet metal were the only artifacts observed. It is unknown what activity produced these pits. They appear to be either prospect holes for placer mining or barrow pits for the nearby Colorado aqueduct. Insufficient information exists with which to assess the site's significance.

Isolated Artifacts and Features. Most (83) of the isolated features recorded (table 8) were roads. Joshua Tree National Monument is crisscrossed with abandoned two-track roads leading to mines, ranches, and wells. Many of the roads recorded appear to be segments of former courses of present main roads.

Two "petroglyphs" were found. The apparent date "1908" (IA-2) was pecked into a boulder near Salton View, and what appears to be a brand (IA-63) was pecked into a boulder near Jumbo Rocks. IA-63 is close to CA-RIV-1962, and both may be the result of tourist activity. IA-63's motif, a hat-over-s, is not a known historic brand in the monument area

Table 8. Isolated Historic Artifacts.

IA	DESCRIPTION	COMMENTS
Package 142: Salton View to Cap Rock		
2	"1908" pecked on boulder	associated with IA-2A
2A	road	
3	road	
4	soldered-seam, 16 oz. meat can	ca 1900-1915; may be related to CA-RIV-1957
7	road	
8	road	
9	road	to Lost Horse Mine
10	road	
15	road	parallels Route 3; segment of William Keys' original road?
16	crown cap amber beer(?) bottle	Illinois Pacific Glass Corp., 1902-1930; net cont. 22 oz.; probably post-1915 (Toulouse 1971:268)
17	road	segment of Keys' road?
18	road	segment of Keys' road?
19	road	Juniper Flats Road
21	road	
Package 198: Cap Rock to Pinto Wye		
23	road	former road to Ryan Campground?
24	road	Lost Horse Well Road?
25	road	
26	road	
27	road	
28	amber bottle base	SB&G Co = Streator Bottle and Glass Co., 1881-1905 (Toulouse 1971:461)
29	road	
30	2 machine parts and 2 metal doors	probably post-1925
32	road	
34	road	
36	road	probably segment of IA-42
40	road	2 road segments that join
41	wooden stand	
42	road	probably segment of IA-36
44	metal can key	nondiagnostic
45	road	
54	road	
58	road	to Split Rock
59	road	
60	road	
62	rock cairn	
63	historic or modern petroglyph	unidentified brand

Table 8--Continued

IA	DESCRIPTION	COMMENTS
Package 198--Continued		
66	road	
67	calipers	nondiagnostic
No package number: Pinto Wye to Twentynine Palms Entrance		
68	road	
69	soldered-seam, drop-top, #2½ can	ca 1900-15
70	road	
72	prospect hole	no associated artifacts
81	road	
82	metal drum top	nondiagnostic
83	road	
85	road	
86	road	
87	road	
88	solder-seam, hole-in-top fish can	ca 1885-1915
89	trash dump	post-1930s
91	solder-seam, hole-in-top, fish can	ca 1885-1915
211	road	
212	metal fragment	nondiagnostic
213	solder-seam, hole-in-top, #2½ can	ca 1900-1915
Package 173: Pinto Wye to Fried Liver Wash		
93	road	segment of older Pinto Basin Road?
94	road	small road loop
95	road	former road to Juniper Flats
97	road	
99	road	may be segment of IA-104
103	2 roads	to Hidden Tank
105	road	
108	road	old loop or turnoff
111	road	
112	road	parallels Pinto Basin Road
114	road	
119	road	historic road to Golden Bell Mine
120	tin pan	nondiagnostic
121	road	may be related to CA-RIV-1953
123	road	
124	road	leads to a prospect hole
126	glazed earthenware sherd	1850s-1930s; trademark blurred

Table 8--Continued

IA	DESCRIPTION	COMMENTS
Package 173--Continued		
127	several road segments	one leads to a mine shaft
132	road	old loop road off Pinto Basin Road
139	road	
141	road	
142	wooden box	
143	road	
144	road	
145	road	
147	road	
148	road	
149	road	
150	road	
151	road	
Package 110: Fried Liver Wash to Smoke Tree Wash		
152	road	leads toward Hexie Mountains
153	road	leads toward Hexie Mountains
154	road	segment of former Pinto Basin Road(?)
165	road	
166	road	connects with Old Dale Road
173	road	leads toward Pinto Mountains
179	road	
180	prospect hole	
181	road	
182	road	leads to Old Dale
183	road	leads To Black Eagle Mine
185	rock pile	
186	road	
Package 111: Smoke Tree to South Boundary		
192	road	leads to a borrow pit
197	road	
198	road	leads to Smoke Tree Well
200	amber beer(?) bottle neck, tooled lip	early 1900s
201	road	adjacent to CA-RIV-1956
202	road	segment of IA-201
207	road	
220	rock pile	
221	trash pile	
222	rock pile	
224	rock dump	
225	rock dump	

Table 8--Continued

IA	DESCRIPTION	COMMENTS
Package 111--Continued		
226	rock pile	biface in association
227	2 rock piles	
228	wire and bucket	
229	road	wagon road(?)
230	road	
231	road	leads to gravel pit
232	rock pile	
501	prospect hole	

(Joshua Tree National Monument files; Patricia Flanigan: personal communication).

Five soldered-seam hole-in-the-top cans, sizes 2½ (fruits and vegetables) and 2-3/8 (fish), were collected; their production dates range from 1885 to 1915. The amber bottles and bottle fragments found are probably beer bottles; their trademarks indicate dates between 1881 and 1925 (Toulouse 1971; George A. Teague: personal communication). A burned earthenware sherd with half of its trademark intact was also found. Its lion-and-griffin stamp indicates a pre-1930s date (Lee Fratt: personal communication). Various wooden and metal objects were also observed. Most, including hoppers, baling wire, buckets, calipers, and oil drums, were nondiagnostic.

Two post-1930s trash dumps (IA-89, IA-221) were recorded as isolated features. One consisted mostly of domestic refuse, such as cans, glass, and ceramics, while the other included construction debris, scrap metal, wire, drain pipes, buckets, and cans.

Six rock piles discovered are of historic or modern date. They generally are low piles of cobble- and gravel-size stones with wooden or metal stakes, broken glass, charcoal, or dead creosotebush limbs embedded. The age of two rock piles, IA-62 and IA-226, cannot be determined. IA-226 has both a biface and a piece of rusted metal in association. All but one of these rock piles are located near Route 1 on the Cottonwood and Eagle mountain alluvial fans. Two prospect holes (IA-180 and IA-501) were also found in this vicinity.

Summary

Six of the 12 historic sites discovered relate to activities and events that predate the founding of Joshua Tree National Monument. They are primarily associated with mining and refuse dumping. The other six sites relate either to tourist littering and vandalism or to National Park Service construction and surveying activities.

Early History. No sites found during the road survey can be definitely dated to this period. The "1853" glyph at CA-RIV-1965 appears to be a fake.

1870-1900. The road to Lost Horse Mine (IA-9) was built during this time, and the isolated beer bottles (IA-28) found in Lost Horse

Valley may have been discarded during this period. Major events in Johnny Lang's life (CA-RIV-1958) also occurred during this time.

1900-1917. Reflecting the heyday of the Joshua Tree area, the number of sites and isolated artifacts dramatically increases. During this period, the Anaconda Mine (CA-SBr-4208) began operation, and an unfortunate miner, Matt Riley (CA-RIV-1956), met his death. Trash was deposited at the CA-RIV-1957 dump, though whether by prospectors or ranchers is unknown. A wide variety of other trash (IA-4, 16, 28, 69, 88, 91, 126, 213, and 200) litters the area, and someone pecked the date "1908" into a rock near Salton View.

1918-1929. Few of the sites can be definitely attributed to this period. Johnny Lang was laid to rest at CA-RIV-1958. Segments of the original Salton View Road (IA-17 and IA-18) reflect the activities of pioneer homesteader William Keys. The small trash dump (CA-RIV-1937) in Lost Horse Valley may have been formed during either this or the preceding period.

1930-1944. Undoubtedly, many of the abandoned roads were built and prospect holes dug during this period. The Gold Point Mine (CA-RIV-1952) was in operation, and the Anaconda Mine was reactivated during the brief boom of the 1930s. The pits at CA-RIV-1938 may have been excavated in association with either the building or the maintenance of the Colorado Aqueduct.

1945-Present. Tourists are responsible for graffiti at CA-RIV-1965, for the Gram Parsons incident at CA-RIV-1959, and for innumerable road segments, loops, and trash dumps (such as IA-89 and IA-221 and CA-RIV-1943). National Park Service activities produced now abandoned roads and mines, artifactual debris, and building debris from construction and road maintenance, especially along the south boundary road segment. Park Service employees may have built the lean-to at CA-RIV-1953 while putting in boundary stakes.

Chapter 5

RECOMMENDATIONS

An area at least 2 ft. to either side of the main road will be directly affected by road widening. The surroundng area may also be affected if construction vehicles travel off the road or are parked off the road's shoulder. Road realignments may affect sites more distant from the road.

Some sites recorded by the 1979 survey crew will be adversely affected by the planned road work. Major areas of concern are sites in Cottonwood Canyon, on the Shavers Valley alluvial fan, and in Queen Valley.

Package 142 - Salton View to Cap Rock. No sites will be adversely affected by road widening. Caution must be exercised, however, in the vicinity of CA-RIV-1958, Johnny Lang's grave, which lies only 12 m west of the road. Mitigative measures may be required if road realignments, pulloffs, or other construction impact CA-RIV-1957 or CA-RIV-1959.

Package 198 - Cap Rock to Pinto Wye. All but one site in this segment lie at least 70 m from the road. The construction of new road shoulders will destroy parts of CA-RIV-1961; midden areas have been identified at this site, and the presence of subsurface material is likely. The main part of the site, however, is south of the road. On the north side of the road, material lies in secondary deposition from a small, north-flowing drainage. Widening on the north side of the road only would result in no adverse impact to the site. An archeologist should monitor road construction here to ensure that there will be no impacts on the south side and that no subsurface material is churned up on the north side.

In the event of adverse impacts from road alignments, mitigative measures will be required at the following sites, which are eligible for nomination to the National Register of Historic Places: CA-RIV-1937, CA-RIV-1938, CA-RIV-1960, and CA-RIV-1963.

No Package Number - Pinto Wye to Twentynine Palms Entrance. Features of CA-SBr-4207 occur on both sides of the road, but none closer than 20 m. If caution is exercised, and if there is no off-road construction or parking, this site will not be adversely impacted by road widening. An archeologist should monitor construction within the site boundaries.

The other two sites along this road segment are located more than 70 m from the present road alignment. If CA-SBr-4207 is endangered by road alignments or pulloffs, the site must be surface collected and tested to determine if subsurface material is present.

Package 173 - Pinto Wye to Fried Liver Wash. The Pinto Basin Road bisects CA-RIV-1964, a lithic and sherd scatter of apparently much earlier date than the other prehistoric scatters located during this survey. Since the site borders both sides of the road, the alternative of undertaking all road widening on one side cannot be considered.

One alternative would be to widen the paved road without widening the shoulders. Existing shoulders should be asphalted so that later road maintenance would not disturb the site. No off-road disturbance during construction may take place. Signs warning against pulling off the road in this area should be posted. An archeologist should monitor road work here if this alternative is chosen. Other alternatives include rerouting the road to the south, away from the site, or to do no work on the existing road within site boundaries.

If these alternatives are not feasible, the site must be excavated. Fieldwork must include making a detailed site map with an alidade or transit, conducting an intensive surface collection, and excavating test units to determine if subsurface material is present.

CA-RIV-1952, the Gold Point Mine, is located within 5 m of the Pinto Basin Road. The site will be adversely affected if the road's west shoulder is expanded. The best alternative for this site is to restrict road widening to the east side of the road where no cultural resources are located.

Again, if this alternative is not practical, an excavation program must be instituted. A map of the site should be made with precision instruments, all artifacts should be collected, and a detailed historical study of the mine should be conducted.

Other sites within this road segment are not eligible for nomination to the National Register of Historic Places and, thus, do not qualify for protective measures.

Package 110 - Fried Liver Wash to Smoke Tree Wash. CA-RIV-1954 and

CA-RIV-1955 will not be affected by road widening. If CA-RIV-1954 is endangered by other construction activities, it should be surface collected and tested.

Package 111 - Smoke Tree Wash to South Entrance. Two sherd and lithic scatters, CA-RIV-1944 and CA-RIV-1951, will be affected by road widening. In both cases, restricting road construction to that side of the road farthest from the site, where no cultural resources are located, is the best alternative. If this is not practical, a program of collection and excavation must be instituted.

Although CA-RIV-1949 is a large sherd and lithic scatter, material is thinly scattered and may be in secondary deposition. No material occurs next to either road side. For these reasons, clearance is recommended for road widening but not for road realignments, pulloffs, or other construction work. It should be emphasized that the sparseness of the surface remains may be misleading. Sherd and lithic scatters often exhibit no surface indications of underlying architectural features or deposition.

CA-RIV-1950 will not be affected by road widening. However, as the site's eastern boundary is less than 50 m from the present road alignment, the Park Service should exercise caution. Should realignments or pullouts be designed here and the site cannot be avoided, complex mitigative measures, entailing surface collection and testing for subsurface materials, would be required.

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